UNIVERSITY OF MIAMI

A private, independent, international university
An equal opportunity/affirmative action employer

An announcement with information on administration, organization, admission and graduation requirements, and the courses of instruction in:

UNDERGRADUATE and GRADUATE STUDIES, 2012-2013

It is the policy of the University of Miami that no person within the jurisdiction thereof shall, on the basis of race, religion, color, sex, age, disability, sexual orientation, veterans status, or national origin, be excluded from, participation in, be denied the benefits of, or be subjected to discrimination or harassment (including sexual harassment) under any program or activity of the University. The University does not intend by this commitment to require compliance with this policy by governmental or external organizations that associate with but are not controlled by the University, except as required by law. The Executive Director of Equality Administration is responsible for coordinating the University’s effort to implement the nondiscrimination policy and Affirmative Action Programs for employees and students. The Executive Director may be contacted at the following address or telephone number: Equality Administration Office - Gables One Tower, Suite 100R; 1320 S. Dixie Highway, Coral Gables, FL 33146; 305-284-3064.

The University of Miami is authorized under Federal law to enroll non-immigrant alien students.

The University reserves the right to change any provision or requirement, including, but not limited to fees and tuition, at any time without notice. Degrees, courses, programs, activities, and like academic or non-academic offerings of the University may also be changed from time to time without notice. The University further reserves the right to require a student to withdraw at any time under University policies, as may be promulgated from time to time. Further, admission of a student to the University of Miami for any semester does not imply that such student will be enrolled in any succeeding academic semesters. It also reserves the right to impose sanctions on any student whose conduct is unsatisfactory. Any admission on the basis of false statements or documents is void when the misconduct is discovered, and the student is not entitled to any credit for work which the student may have done at the University prior to any discipline that may be taken as a result of such misconduct. When a student is dismissed or suspended from the University for cause, there will be no refund of tuition or fees paid. If a dismissed student has paid only a part of his tuition and fees, the balance due the University will be considered a receivable and will be collected.

There will be no refund of tuition, fees, charges or any other payments made to the University in the event the operation of the University is suspended at any time as a result of any act of God, strike, riot, disruption, or for any other reason beyond the control of the University.

The University of Miami is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award the baccalaureate, masters and doctoral degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of the University of Miami.
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THE UNIVERSITY OF MIAMI MISSION STATEMENT

The University of Miami’s mission is to educate and nurture students, to create knowledge, and to provide service to our community and beyond. Committed to excellence and proud of the diversity of our University family, we strive to develop future leaders of our nation and the world.
ACADEMIC PROCEDURES AND INFORMATION - UNDERGRADUATE

While the University makes every effort to provide academic counseling to its students, its basic policy places the responsibility for planning an academic program upon the student.

The University of Miami relies on electronic means (email and myUM accounts) for correspondence with students. Students are required to maintain a working email address and are expected to update their personal biographical information annually via their myUM account. Students who fail to maintain a working email account may not receive critical university information.

Students are expected to familiarize themselves with the requirements of:
- the University,
- the schools in which they are enrolled, and
- their major department.

Requirements refer to those stated in the Bulletin at the time of admission to degree status, unless a student has not been continuously enrolled. In such cases, the Bulletin in effect at the time of re-admission is the one to be used. In such cases, the determination of the Bulletin in effect is made by the readmitting School or College.

Academic core requirements will not be waived for students under any circumstances.

The work of each student is under the supervision of an academic Dean and of the appropriate Scholarship Committee. A student who fails to maintain an adequate academic record may be dismissed from the University.

Admission of a student to the University of Miami for any semester does not imply that such student will be re-enrolled in any succeeding academic semesters. If a student whose record is unsatisfactory is for some reason permitted to continue in attendance, the appropriate scholarship committee or Dean may specify the standard that must be attained, and any other conditions to be met.

A student who graduates and plans to enter a graduate school or professional school at the University of Miami must apply for admission to the appropriate school of the University in accordance with application deadlines of respective schools.

Not all the regulations and procedures described below pertain to the Graduate School, the Law School, and the School of Medicine. The specific regulations of these schools are stated in their Bulletins.

STUDENT-RIGHT-TO-KNOW AND CAMPUS SECURITY ACT

The Student-Right-to-Know and Campus Security Act requires institutions to disclose information about graduation rates and crime statistics to current and prospective students. Students interested in obtaining this type of information should contact the Office of Admission, (305) 284-4323 or go to www.miami.edu/hea.
FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT (FERPA) (BUCKLEY AMENDMENT)

The purpose of this policy is to assure that students have access to their educational records and to assure the privacy of students by restricting the disclosure of information from education records to those persons authorized under the Act.

The policy is provided to all students in the Student Life Handbook. Copies can also be printed from the website www.miami.edu/hea.

SECURITY OF STUDENT RECORDS

The Office of the Registrar is charged with the responsibility of maintaining the security and integrity of student records. Student records created before 1985 are stored on paper or have been electronically scanned. Those remaining on paper are stored in an off-site location, available only to Registrar personnel. Student records created after 1985 are housed on an electronic database.

In order to maintain confidentially, access to the student record system is limited to university personnel who have a legitimate need for this information. Each user is required to fill out an access form. A user name is created, and each user must also create a password that must be changed every 90 days. Periodic audits of records as well as reviews of who has access to the system are regularly scheduled to ensure a secure environment.

Students are assigned a UM ID number that is unique to them and they are encouraged to use it instead of their social security number. Students are required to provide their student ID or a photo ID when requesting academic record information from this office.

FERPA TRAINING

FERPA, the Family Educational Rights and Privacy Act, provides established guidelines for universities to ensure that students have access to their educational records as well as to ensure the privacy of said records by restricting the disclosure of information from educational records to those persons authorized under the Act. FERPA guidelines must be followed when dealing with the disclosure of student information.

All staff who use the student records system are required to complete an online FERPA tutorial. Periodic reviews are required; failure to complete this tutorial will lock a user out of the system. The Registrar’s Office also offers FERPA information sessions to parents of new students each fall during new student orientation.

STOPS ON STUDENT RECORDS

Schools and colleges, university administrative departments and other student related offices have the ability to put stops on student records. These stops can be financial, academic or disciplinary in nature and may delay a student's ability to register, to receive an official transcript or to receive a diploma. Stops on a student’s record normally require action on the part of the student, i.e., a payment, completion of paperwork, etc. Specific information on a stop and what is required to remove it can be obtained from the office/department that initiated the stop.
ACADEMIC CREDITS

The University operates on the semester system and, for its measure of academic course work, uses academic credits (referred to as semester credits, semester hours, credit hours, hours, or credits).

An academic credit (of work) is given for one 50-minute period a week throughout an academic semester or its equivalent per week for a semester of fifteen weeks or its equivalent in summer session. Two or three laboratory hours each week throughout a semester are considered the equivalent of one lecture hour in counting credits earned in an undergraduate laboratory or studio course.

No grades or credits are given for audited courses.

CHANGE OR DROP OF COURSE

Course changes after the completion of registration must be approved by the student’s academic dean. Forms must be fully processed to make any approved changes official.

Dropping of any course for which the student has registered is official only when the appropriate approvals are obtained and the form has been processed by the Office of the Registrar. Failure to attend classes or merely giving notice to instructors of one’s absence will not be considered as an official withdrawal and may result in failure in the course.

The last day to drop a course or make a change in credit-only option is noted on the Academic Calendar located on the Office of the Registrar’s website at www.miami.edu/registrar. Students enrolled in a course after the withdrawal date must receive a final grade in the course.

CLASS ATTENDANCE AND ABSENCES

Regular and punctual class attendance is vital for all students. Instructors will distribute course syllabi which include policies regarding class attendance and missed or late work. Any student may be dropped from a course or receive a lowered grade for unauthorized absences in excess of those permitted by the instructor. It is each student’s responsibility to know and understand the instructor’s policies. It is also the student’s responsibility to give the instructor notice one week prior to any anticipated absence and to contact the instructor within one week after any unanticipated absence.

All students are responsible for material covered during their absence. However, the instructor must allow each student who is absent for a University-approved reason either the opportunity to make up, or to be excused from, work missed, without any reduction in the student’s final course grade as a direct result of such absence.

Other than absences for a University-approved reason, the instructor determines whether or not an absence is for an acceptable reason and whether or not students shall have the opportunity to make up missed work. If the instructor does not recognize the reason as acceptable, the student may appeal to the chair of the department in which the course is offered.
The following constitute University-approved reasons for absences:

1. Participation in an activity approved by the Academic Deans Policy Council, such as musical and debate activity, R.O.T.C. function, or varsity athletic trip; participation in a special academic activity such as a field trip or other special event connected with academic coursework. Verification of a student’s participation shall be issued by the sponsor when authorized by the Office of the Executive Vice President and Provost.

2. Observance of a religious holy day as described in the Religious Holy Day Policy, below:

**Religious Holy Day Policy**

The University of Miami, although a secular institution, is determined to accommodate those students who wish to observe religious holy days. It seeks to reflect its awareness of and sensitivity to religious holy days whenever possible when scheduling University activities. The following provisions are meant to apply equitably to all religious groups and to provide opportunities to all to meet their religious obligations.

a. Except as specifically provided to the contrary, this policy is binding on all students in undergraduate programs. Schools offering graduate or professional programs, including undergraduate professional programs, are strongly encouraged to adhere to these policies to the maximum extent practicable.

b. Any student absent from class in observance of a religious holy day shall not be penalized in any way for an examination or assignment missed during the period of absence. Absence in observance of a religious holy day does not relieve students from responsibility for any part of the course work required during the period of absence. Students who are absent on days of examinations or class assignments shall be offered a reasonable opportunity to make up the work without penalty, if the student previously arranged to be absent. Nothing in this policy shall preclude faculty members from limiting the number of student absences to a reasonable number of absences for any reason. The faculty member has discretion to determine how the make-up obligation will be fulfilled. A faculty member who penalizes a student contrary to these provisions may have committed unprofessional conduct, and thus may be subject to a complaint to the Committee on Professional Conduct under the provisions of Section B4.9 of the Faculty Manual.

c. It is the student’s obligation to provide faculty members with notice of the dates they will be absent due to observance of religious holy days, preferably before the beginning of classes but no later than the end of the first three class days. For religious holy days that fall within the first three class days, students must provide faculty members with notice no later than two class days before the absence. Missing a class due to travel plans associated with a particular religious holy day does not constitute an excused absence. Absences due to observance of religious holy days that are not pre-arranged with the relevant faculty member within the first three class days may be considered unexcused, and the faculty member may therefore prevent the student from making up examinations or assignments missed during the period of absence.
d. Faculty members are encouraged to anticipate days when a substantial number of students will be absent for observance of religious holy days and should avoid scheduling examinations and assignment deadlines on those days. Faculty members are expected to reasonably assist students in obtaining class information the student missed during the period of absence in observance of a religious holy day. In that regard, faculty members are urged to allow taping or recording of the class session, with the reproduction limited to the student’s personal use, when a student misses a class due to observance of a religious holy day. To assist in identifying religious observance days, faculty members are encouraged to consult the illustrative list provided in the Interfaith Calendar (http://www.interfaithcalendar.org). Faculty members are urged to remind students of their obligation to inform faculty members within the first three class days of any anticipated absences due to observance of religious holy days and should include that information in the syllabus or course requirements document for that course.

**COURSE-NUMBERING SYSTEM**

The following course-numbering system is used:

Courses in the 100 series are primarily for freshmen.
Courses in the 200 series are primarily for sophomores.
Courses in the 300 series are primarily for juniors.
Courses in the 400 series are primarily for seniors.
Courses in the 500 series are open only to qualified undergraduates and graduate students.
Courses in the 600 and 700 series are open only to graduate students.

Courses in some departments, with the specific numbers 100, 200, 300, 400 are offered, in most instances, on an experimental or trial basis. When listed in myUM’s Course Offerings, a more descriptive title will normally be attached.

**CREDIT FOR SERVICE EXPERIENCE**

Veterans of the military services may make application for academic credit for schooling received while in the armed forces. Credit may be awarded for work that the American Council on Education Guide regards as college level. Students must have credits approved by their departmental chairperson.

Credit for military service and experience is usually in the elective area and may not take the place of subjects required for graduation. Such work is not assigned quality points and is not included in quality point computations.

**CREDIT ONLY OPTION**

The credit only option has been established to encourage students to explore academic areas outside their major and minor fields of concentration. Students may use this option with free electives and receive a CR (Credit Received) or NC (No Credit). These courses become part of a student’s record, but they do not count in the grade point average as computed by the University of Miami.
Eligibility

To be eligible to enroll for courses under the CR/NC option, a student must:

1. hold the standing of Sophomore or above, and, if a transfer, must have completed one semester of residency at the University of Miami;
2. at the time of registration have a minimum cumulative grade point average of at least 3.00;
3. elect the CR/NC option within two weeks following the last day of registration for Fall and Spring semesters. Election of CR/NC options for Summer Sessions must occur no later than the fifth class day following the last day of registration. No changes except withdrawals from the course are permitted after this time.

Regulations and Restrictions

1. Eligible students may take one course per semester for credit only, to a maximum of 9 credits.
2. Only free electives may be taken under this option. Free electives are defined as courses not taken to fulfill the requirements for the major, minor, or general education requirements (including prerequisite course work) of the University and the individual schools.
3. ENGLISH 105 and ENGLISH 106 cannot be taken for credit only.
4. Grading standards for the credit only option are the same as for students who register for the course under the regular grading system. Letter grades will be submitted by instructors to the Office of the Registrar. The Office of the Registrar will change all grades A through C (including “C-”) to CR (Credit Received) for those enrolled under the CR/NC option.
5. A grade of NC (No Credit) will be recorded by the Office of the Registrar for all grades of D and F. The student will not receive credit hours or quality points for the grade of NC.
6. Should a student subsequently change his/her major, free electives taken for credit only prior to the declaration of this major may be counted toward fulfilling major, minor, or general education requirements at the discretion of the department chairman and the academic dean.

FINAL EXAMINATION POLICY

Final Examinations may not be given during a regularly-scheduled class period.

No examination shall be permitted during the reading period.

Final Examinations may be rescheduled only with the permission of the dean.

No student shall be required to take more than two final examinations in a twenty-four hour period. A student having three or more final examinations scheduled during a twenty-four hour period may request the instructor of the course most easily rescheduled (normally the course with the smallest enrollment) to reschedule the examination for that individual. The request shall be made no later than two weeks before the last class day.

A student who has a conflict between a final examination and a religious observation may request that the instructor reschedule that student’s examination. The request shall be made no later than two weeks before the last class day.
For the resolution of any problem pertaining to the scheduling of final examinations, a student should consult with the following entities or persons in this order: the relevant instructor, the department chair, the Dean or designee. If the matter cannot be resolved at the school or college, the student should contact the Office of the Provost.

REGISTRATION

Registration dates are shown on the University Academic Calendar, and all students are expected to register on these days. If a student is permitted to register late, a fee is charged.

CANCELLATION OF COURSES

Students who select their courses and fail to make financial arrangements with the Office of Student Account Services (OSAS) will have their course schedules canceled. Once schedules are canceled, students are charged a reinstatement fee in addition to their other fees in order to reinstate their classes. These fees can only be waived by a staff member from OSAS or the Office of Financial Assistance Services. Reinstatement of classes can only occur after the cancellation stop has been removed due to payment of financial obligations.

REPEAT RULES

A student may repeat a course, but the repetition will not eliminate the previous grade from the record. A course may be repeated only once unless written authorization is provided by the chair of the department in which the course is offered or, in the case of an undepartmentalized school, by the dean.

ILLEGAL REPEAT

A student may not repeat a course in which a grade of C or higher has been earned. This is considered an illegal repeat.

GENERAL REPEAT RULE

- If the initial grade is D+ or lower (or a C- in cases where an academic unit requires a C or higher), both the initial grade and the repeat grade are included in the computation of the student’s cumulative grade-point average (CGPA).

- If the initial grade is a D or D+ (or a C- in cases where an academic unit requires a C or higher) and the repeat grade is passing, the number of credits required for graduation will be increased by the number of credits repeated.

- Registrations that involve repeating a course in which a grade of C or higher (or C- in cases where an academic unit does not require a C or higher) has already been earned do not earn quality points or credit hours, nor count as credits attempted.

- Courses repeated after graduation will be posted to the transcript showing the grade received; however, the CGPA and credits earned will not be modified based on the grade received for the repeated course.
FRESHMAN REPEAT RULE

- A student may elect to repeat up to two courses that were taken at the University of Miami within that student's first two semesters of college work and in which the student earned a grade of D or F. Each repeated course must be taken at the University of Miami, must be the same course as the course initially taken, and must be completed within 12 months after the end of the semester (or summer session) in which the initial course was first taken.

- No course may be repeated more than once under this rule. A course repeated more than once under the University’s General Repeat Rule will not qualify under the Freshman Repeat Rule.

- Enrollment for a second time in a course constitutes a repeat of that course for the purposes of this rule, unless the student withdraws from the course on or before the University’s published Last Day to Drop a Course date.

- For each repeated course, only the second grade (whether higher, or lower, or the same as the first grade) will be used in the computation of the student's CGPA. The initial course will not count as credits attempted or earned, although the initial course grade will remain on the student’s permanent record.

- Students who plan to apply to graduate and/or professional school should be aware that such institutions may recalculate the CGPA to include the initial grade earned before the repeat.

SCHEDULES

Fifteen or sixteen semester hours constitutes a normal schedule at the University. Academic deans and advisors will determine the appropriate credit load for their students. (A schedule of charges for credits is found in the Financial Payment Policies section of this Bulletin.) The schedule of any student whose outside interests cause unsatisfactory scholastic attainment may be reduced by the dean.

TEMPORARY/PERMANENT WITHDRAWAL FROM THE UNIVERSITY

In order to withdraw officially from the University, a student must notify the Office of the Registrar and complete the withdrawal process. Veterans and children of deceased or totally disabled veterans attending the University as students under the government's educational benefit bills must also be cleared by the Veterans Affairs Certifying Official.

Varsity athletes or any athlete registered with the department of Athletics must obtain approval and be cleared by the Athletic department prior to any change in their registration status, including withdrawal from the university.

During the academic year, tuition will be refunded on a prorated basis depending on the date that is noted as the 'Total Withdrawal Date'. Tuition will be refunded on a prorated basis through 60 percent of the semester.

Dropping courses in a summer session, thereby reducing a student credit-hour load to zero, is not construed as a formal withdrawal from the University.
Title IV financial aid and tuition will be refunded on a pro rata daily basis through 60 percent of the semester. This date is determined based on the student notifying the Office of the Registrar of his/her intent to withdraw. If the student fails to notify the Office of the Registrar, federal guidelines for determining refunds will be followed. Please see the Refund Policy under the Financial Payment Policies section of this Bulletin.

MILITARY WITHDRAWAL

a. On the recommendation of the Dean of the school, students who withdraw after the 12th week of the semester because of official orders to active duty with the Armed Forces of the United States may either be awarded credit (CR) or an academic grade for any course in which they have achieved a C or better up to the time of withdrawal. Instructors must certify that the student had achieved satisfactory accomplishment on the basis of previous work in the course by awarding an appropriate grade. Accomplishment of less than C should be entered on the permanent record as a withdrawal without prejudice (W).

b. Credit granted for courses under this policy should count toward graduation.

c. There should be no refund of tuition for courses for which credit has been awarded. Refunds for courses not awarded credit should be on the same basis as complete withdrawals for military service.

d. The above recommendations are procedures for determining the awarding of credit and do not release the student from the usual withdrawal procedures.
GENERAL EDUCATIONAL REQUIREMENTS

PHILOSOPHY

The University of Miami and its faculty are committed to developing and nurturing within our students the ability to demonstrate critical thinking skills, communicate effectively, contribute knowledge, understand perspectives that differ from their own, and develop skills necessary to become effective leaders and active participants in the global society.

As an institution of higher learning in an increasingly diverse and global community our goals are to produce graduates who have been exposed to a broad spectrum of educational opportunities and to prepare them for successful participation in the world. The University’s General Education Requirements consist of coursework taken both before and in addition to students’ specialized study within their areas of concentration. The aims of the General Education Requirements are designed to ensure that graduates of the University will have acquired essential intellectual skills and exposure to a range of intellectual perspectives and academic disciplines. The University’s General Education Requirements focus on two student learning areas: 1) proficiency in English composition, writing, and mathematics and 2) knowledge of the natural world, people and society, and arts and humanities. By helping students strengthen their abilities to think with both words and numbers, they will develop the analytical skills basic to nearly all fields of advanced learning but exclusive to none. By deliberately introducing students to various intellectual achievements in major areas of human inquiry and creative endeavor, the University of Miami’s General Education Requirements provide a broad intellectual backdrop to students’ more focused studies in their majors and minors. Whereas the requirements of majors specified by Schools and Colleges within the University emphasize depth of learning, the General Education Requirements stress breadth of knowledge and the cultivation of intellectual abilities essential for the acquisition of knowledge.

Some schools and colleges may designate specific coursework to fulfill the areas of knowledge requirements listed below; students should consult the specific GER requirements for their school or college in the appropriate section of this Bulletin.

These requirements may be satisfied by courses taken for a letter grade, or by credits earned through Advanced Placement (AP) or International Baccalaureate (IB) examinations taken in high school. These credits may be applied to the 120 credits required for graduation.

AREAS OF PROFICIENCY

Proficiency requirements are intended to ensure that students either already possess, or will develop at the University, the ability to express themselves effectively, to use mathematics with facility, and to reason cogently.

1. English Composition

Good writing facilitates clear thinking, and clear thinking is the foundation of effective communication. It is the University’s expectation that our students become adept at using the English language as an effective tool for communication. Effective writing skills are representative of the educated person because they are instruments to advance ideas efficiently and persuasively. During their first year of study, students fulfill this requirement by satisfactorily completing English 105 and English 106 or the equivalent. Appropriate
Advanced Placement (AP) or International Baccalaureate (IB) scores in English composition may be used to satisfy the English 105/106 requirement. An appropriate score on the SAT or ACT verbal examination may earn a student exemption from, but not credit in, ENG 105.

**Students will be able to:**
- Gather information, synthesize data, compare various points of view, and present the results in writing.
- Develop the ability to read texts critically and to use textual evidence to support a sophisticated written argument.
- Consider audience, tone, organization, and standard conventions in relationship to specific rhetorical tasks.

2. **Writing Across the Curriculum (W) 5 courses**

In addition to English 105/106, students must complete five (5) courses designated as Writing Across the Curriculum (W) courses. The purpose of these courses is to help our students refine their writing abilities so that they are able to communicate their ideas clearly and effectively through the various styles of writing appropriate to the academic fields of their majors and minors. Courses designated as writing courses ("W" courses) require a substantial amount of writing and the preparation of papers that are corrected for diction, syntax, style, and content. Some courses satisfying this Writing Across the Curriculum requirement may simultaneously fulfill Areas of Knowledge requirements (described below).

**Students will be able to:**
- Demonstrate ability to write persuasively, using tools of argumentation and advocacy appropriate to subject, audience, and occasion.

3. **Mathematics**

In a world increasingly influenced by science and technology, it is important for students to acquire the capacity to use and understand essential mathematical applications. The mathematics requirement helps students learn to use quantitative methods in order to solve problems. The course requirements for mathematics emphasize the manipulation, interpretation, and application of quantitative data. Students fulfill this requirement by satisfactorily completing a course in mathematics numbered above MTH 101 (excluding MTH 107), or MAS 110, or an approved course in statistics. Exemption from the mathematics requirement or placement in prerequisite courses is based on any of the following tests: AP, IB, or an examination administered by the Department of Mathematics during Orientation.

**Students will be able to:**
- Select quantitative tools appropriate for the solution of problems.
- Use quantitative tools appropriate for the solution of problems.
- Interpret quantitative data in an appropriate manner for solving problems.

**AREAS OF KNOWLEDGE**

These requirements are designed to help students understand and appreciate the intellectual achievements in major areas of human inquiry and creative endeavor. The courses offered in the areas of knowledge provide a broad array of intellectual and cultural exploration. In satisfying these requirements students will explore the natural world, examine human development and behavior, and appreciate creative expression in the arts,
literature, and philosophy. Courses satisfying these requirements are identified in the Bulletin under the Requirements for Graduation sections for each school or college.

1. Natural World (formerly Natural Sciences) - 6 credits
2. People and Society (formerly Social Sciences) - 6 credits
3. Arts and Humanities - 12 credits

Schools and colleges that do not have a language requirement may allow their students to satisfy the humanities requirement by taking a modern language course numbered 101-212 or Latin or Greek, so long as the language selected differs from the student’s native language, and if, when beginning with a 101-level course, they also take the 102-level course in the same language.

No more than six credit hours may be taken in any one department to satisfy the areas of knowledge requirement. There are pre-requisites for most courses above the 100-level.

The following general educational requirements are designed for general reference only. Please check with your advisor or the advising office in your school or college for specific requirements.

Natural World

The University believes a comprehensive curriculum maximizes our students’ capacity to understand the natural world through experimentation, observation, and quantitative analysis. Our purpose is to nurture our students’ curiosity regarding the natural world through the critical analysis of data as well as the evaluation of research. Students can satisfy the course requirements by selecting courses in Biology, Chemistry, Ecosystems Science and Policy, Geological Sciences, Marine Science, Physics, and Physical Science, as well as Anthropology 203, Geography 120, and Freshman Seminars in the Natural Sciences (FNS 190-199).

Students will be able to:
- Demonstrate ability to use experiment and observation quantitatively in order to analyze the natural world, to draw conclusions about it, and to understand modern scientific theories.

People and Society

This area of knowledge aims to help students understand and critically evaluate the organization of society and the patterns of social change, both in the past and in the contemporary world. Courses in the following areas may be used to fulfill this requirement: Africana Studies (AAS); American Studies (AMS); Anthropology (except APY 203); Economics (ECO); Education and Psychological Studies (EPS); Geography and Regional Studies (except GEG 120); International Studies (INS); Judaic Studies (JUS); History (HIS); Political Sciences (POL); Psychology (PSY); Sociology (SOC); Teaching and Learning (TAL); Women’s and Gender Studies (WGS), and the following courses: Broadcasting and Broadcast Journalism (CEM 102); Mass Media Communication in Society (COM 101); Communication Theory (COM 110); Interpersonal Communication (COS 112); Nonverbal Communication (COS 118); Political Communication (COS 336); Persuasion (COS 472); Freshman Seminars in the Social Sciences (FSS 190-199).
Students will be able to:

- Critically evaluate the organization of society both in the past and in the contemporary world.
- Critically evaluate patterns of social change, both in the past and in the contemporary world.

Arts and Humanities

The arts and humanities engage students in the study of some of the most enduring and influential works of art, imagination, and culture. Courses in this area help students learn to understand the deep insights and culturally formative works of philosophers, poets, novelists, artists, musicians, theologians, and playwrights. These courses will provide instruction and guidance to cultivate students’ abilities to interpret and critically evaluate the creative products of human expression. Courses in the following areas may be used to fulfill this requirement: Architecture; Music; Art and Art History; Theatre Arts; Motion Pictures and Photography; English (200-level or above); Modern Languages and Literature (300-level or above); Philosophy; Religious Studies; and the following courses: Public Speaking (COS 211); World History of the Dance (DAN 250); Freshman Seminars in the Arts and Humanities (FFA, FLT, FPR 190-199)

Students will be able to:

- Apply appropriate vocabulary and concepts for the description and analysis of artistic, literary, historical and philosophical or religious works.
- Interpret the creative products of human expression.
- Critically evaluate the creative products of human expression.

Assessment of General Education Competencies

All University of Miami students will be required to participate in a formal assessment of the General Education competencies at two points during their academic career: upon entry to UM and prior to graduation. Results will be used by the administration and faculty to ensure the continuous improvement of the educational experience provided to our students.
ACADEMIC

ACADEMIC WARNING REPORT

Academic Warning Reports are sent to students who are doing D or F work in any course before the last day to drop a course. Faculty also have the option of providing students with constructive feedback relating to their attendance and the quality of their work. Academic Warning Reports are due on the 30th class day.

ACADEMIC STANDING, PROBATION, AND DISMISSAL

At the end of each semester the University shall determine whether a student is in Good Academic Standing, on Academic Probation, or subject to Academic Dismissal. Some schools and colleges may have exceptions to the Good Academic Standing, Academic Warning, Academic Probation and Academic Dismissal policies listed below.

Good Academic Standing

To be in Good Academic Standing a student must not be on Academic Probation or subject to Academic Dismissal.

Academic Warning

A student whose semester grade-point average (SGPA) or cumulative grade-point average (CGPA) falls below 2.0 shall receive an Academic Warning. All students who receive an Academic Warning must meet with their academic advisor prior to the following semester. The advisor may require a reduced course load.

Freshmen who receive a mid-term grade of D or F in any course shall receive an Academic Warning and must meet with their academic advisor within two weeks of the distribution of mid-term Academic Warnings.

Academic Probation

Students other than first-semester freshmen whose UM cumulative grade-point average (CGPA) in University of Miami courses is below the following levels shall be placed on Academic Probation.

<table>
<thead>
<tr>
<th>Credits earned*</th>
<th>CGPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fewer than 33 credits</td>
<td>1.7</td>
</tr>
<tr>
<td>33-64 credits</td>
<td>1.8</td>
</tr>
<tr>
<td>65-96 credits</td>
<td>1.9</td>
</tr>
<tr>
<td>More than 96 credits</td>
<td>2.0</td>
</tr>
</tbody>
</table>

* Total credits earned including work taken elsewhere and accepted by the University of Miami.

First-semester freshmen who have a semester grade-point average below 1.3 shall be placed on Academic Probation. In addition, students who fail to make satisfactory progress toward meeting the degree requirements specified by their School or College may be put on Probation by the Academic Standards Committee of the School/College. Students on
Academic Probation must meet with their academic advisor prior to the following semester and shall be restricted to a 13-credit load.

**Academic Dismissal**

A student who remains on probationary status after two consecutive semesters on Academic Probation shall be subject to Academic Dismissal. A student who has been on Academic Probation for one semester and has a CGPA below 1.0 shall also be subject to Academic Dismissal. The decision to dismiss shall be made by the Academic Standards Committee of the School or College in which the student is enrolled. If a decision is made not to dismiss, the student shall be on Academic Probation.

**APPEALS AND READMISSION**

Students who wish to appeal their Academic probation or dismissal for academic reasons, must do so in writing to the School or College Academic Standards Committee within thirty days of the notice of dismissal. Those who have been dismissed for academic reasons shall not be considered for readmission to any school or college at the University until at least two regular semesters have elapsed since their dismissal.
Faculty Senate Student Affairs Committee Standard Academic Appeals Process

The Faculty Senate Student Affairs Committee (FSSAC) has responsibility for undergraduate student academic appeals. The FSSAC includes faculty representatives from all undergraduate schools as well as three non-voting *ex officio* representatives: a graduate and undergraduate student representative and the University ombudsperson. The FSSAC reviews undergraduate student academic appeals that have not been resolved at the department, school, or college levels. As noted in section II below, the FSSAC hears cases only after they have gone through the departmental and college process. The processes are the same for grade and non-grade appeals except as noted below.

I. Time Constraints

Appeals must be filed within a year of the occurrence of the academic action resulting in the appeal and prior to the completion of all degree requirements or withdrawal from the University. Exceptions to this deadline may be permitted by the FSSAC for good cause.

Each level of appeal should aim to review the appeal and arrive at judgment within a two month period from the date the appeal reaches them. The entire process should be completed within one year.

II. Order of Appeal

A student appeal regarding a faculty or administrative academic action must be addressed to the following entities or persons in this order:

A. The faculty member or administrator responsible for the course, program, or activity.

B. The department/program chair/director or administrative superior of the faculty member or administrator.

C. The Dean or designee of the school or college offering the course, program or activity.

D. If the school, college or administrative unit has a committee constituted to hear student appeals, that committee must be consulted before proceeding to the next level.

E. The ombudsperson. The student is to provide the materials listed in Section III below to the ombudsperson who will review the merits of the appeal, and attempt to resolve the matter. The ombudsperson, as part of his/her review should give the student a preliminary assessment as to whether the matter, as presented by the student at that time, is reviewable by the FSSAC.

If the matter is the appeal of a final grade, and only after all the other steps are taken, the ombudsperson may refer the matter to the Provost who will decide whether or not to refer the appeal to the FSSAC.

For a non-grade-appeal, the student has the final authority to decide whether to take the appeal to FSSAC. If s/he chooses to do so, the ombudsperson shall forward the appeal and the accompanying documentation to the FSSAC via the Faculty Senate Office.
F. The Provost may request that the FSSAC review an appeal. If, but only if, s/he does so, the FSSAC shall have jurisdiction to review a grade-related appeal.

1. As part of the request, the Provost shall forward to the FSSAC, via the Faculty Senate office, the materials submitted by the student as indicated in Section III, below.

2. The FSSAC will review the student's written appeal (see section III below), confer with the appropriate faculty, administrators, and others as it deems necessary in making its recommendation to the Provost. The FSSAC may request an interview with the student, additional information or access to records, interviews with relevant faculty or administrators, or additional information or access to records kept by faculty or administrators.

3. The FSSAC will communicate its findings and recommendations to the Provost. Copies shall be provided to the Faculty Senate.

G. The final decision with respect to the grade-related appeal will be made by the Provost and communicated to the student in writing. Copies shall be provided to the Faculty Senate Office and to the Chair of the FSSAC.

H. For non-grade-related academic appeals:

1. The FSSAC shall act upon those appeals and report its findings and decision to the Provost. Copies shall be provided to the Faculty Senate.

2. The Provost shall communicate the decision of the FSSAC to the student in writing. Copies shall be provided to the Faculty Senate.

III. Materials for an Appeal

When bringing an appeal, the student must state in writing issues s/he wishes to have considered. The appeal must include:

A. An appeal letter clearly stating the conditions as seen by the student, and offering reasons for granting the appeal.

B. The appeal letter must indicate if the student wishes to make a personal appearance and, if so, the reasons why the appearance is necessary.

C. Documents of support (e.g., examinations, term papers, syllabi, or medical documentation of illness) that the student wishes to have examined.

D. All written decisions made at earlier levels of the appeal by individual faculty/administrators, departments/programs/administrative units, college or school committees, and deans which are available to the student or in the student’s possession.

IV. Other Notes and Special Conditions

A. If the appeal is based on or related to a charge made by the student of discrimination on the basis of race, color, national origin, religion, sex, sexual orientation, age, or handicap, a representative of the appropriate University office will be contacted and, as appropriate, consulted in the appeal process.
B. If the appeal is based on or related to a disability:

1. The ADA Coordinating Committee shall serve in an advisory capacity.

2. The student is to include in the materials provided, the appropriate forms from the Office of Disability Services documenting:
   a. An evaluation of the disability
   b. Recommendations related to the disability

3. The FSSAC does not consider appeals based upon the grant, denial or modification of an accommodation by the Office of Disability Services. Instead, any such appeal is as prescribed by the Office of Disability Services Grievance Procedure only.
# THE GRADING SYSTEM

The following symbols are used:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Excellent attainment</td>
</tr>
<tr>
<td>B</td>
<td>Good attainment</td>
</tr>
<tr>
<td>C</td>
<td>Fair attainment</td>
</tr>
<tr>
<td>D</td>
<td>Poor attainment (earns credit but may not fulfill requirement for a major)</td>
</tr>
<tr>
<td>F</td>
<td>Failure (effective Fall 1995)</td>
</tr>
<tr>
<td>W</td>
<td>Course dropped on or before the last day for withdrawing from classes as published in the official calendar of the University. Credit can be earned only by successful repetition of the course.</td>
</tr>
<tr>
<td>I</td>
<td>Incomplete work in passing status with the instructor’s permission to complete the course. An “I” will be assigned only if the instructor is satisfied that there are reasonable non-academic grounds for the student’s incomplete work. <strong>An &quot;I&quot; is not intended to be assigned in order to permit a student to repeat a course without registration or to permit a student to do additional work in order to improve upon grades earned during the semester.</strong> The student who receives an “I” must complete the course with a passing grade within the time frame specified by the professor of the course but not longer than the end of one calendar year, or prior to graduation, whichever occurs first. An Academic Dean may approve an extension initiated by the course instructor. An “I” not completed prior to the student’s graduation shall be changed to an “IE” or “IF” by action of the student’s Academic Dean.*</td>
</tr>
<tr>
<td>IP</td>
<td>Denotes in progress grade assigned upon satisfactory completion of the first-semester of a two-semester sequence, with the final grade for both courses to be submitted at the end of the second semester of the sequence. Please note that all “IP’s” must be converted to a letter grade or “IF” at graduation. “IP” will also be converted to “IF” upon any departure from the University for a period in excess of one year.*****</td>
</tr>
<tr>
<td>IF</td>
<td>Symbol indicating that an “I” grade was not appropriately completed.**** The symbol “IF” is equivalent to an “F” when computing a student’s average.</td>
</tr>
<tr>
<td>CR</td>
<td>Grade signifying that credit only is awarded based on a “C” average or better.</td>
</tr>
<tr>
<td>NC</td>
<td>Grade signifying that no credit is awarded based on a course average below a grade of “C”.</td>
</tr>
<tr>
<td>NG</td>
<td>Symbol assigned by the Office of the Registrar indicating that the instructor has not reported the student’s grade. For a student to receive credit for the course, the instructor must report a passing grade prior to the student’s graduation, or by the end of one regular academic semester, whichever comes first. An Academic Dean may approve an extension initiated by the course instructor. An “NG” not replaced by a passing grade, or by a “W”, prior to the student’s graduation shall be changed to an “F” by action of the student’s Academic Dean.***</td>
</tr>
</tbody>
</table>

---

* **An "I" is not intended to be assigned in order to permit a student to repeat a course without registration or to permit a student to do additional work in order to improve upon grades earned during the semester.**

** The student who receives an “I” must complete the course with a passing grade within the time frame specified by the professor of the course but not longer than the end of one calendar year, or prior to graduation, whichever occurs first. An Academic Dean may approve an extension initiated by the course instructor. An “I” not completed prior to the student’s graduation shall be changed to an “IE” or “IF” by action of the student’s Academic Dean.*

**** The symbol “IF” is equivalent to an “F” when computing a student’s average.

***** “IP” will also be converted to “IF” upon any departure from the University for a period in excess of one year.

****** Please note that all “IP’s” must be converted to a letter grade or “IF” at graduation.

******* “IP” will also be converted to “IF” upon any departure from the University for a period in excess of one year.

******** An Academic Dean may approve an extension initiated by the course instructor.

********* An “NG” not replaced by a passing grade, or by a “W”, prior to the student’s graduation shall be changed to an “F” by action of the student’s Academic Dean.***
GRADE POINT AVERAGE

The grade point average is used to determine:

- class rank
- graduation and honor eligibility
- good standing, probation, and dismissal status
- scholarship eligibility

Your official grade point average is based only on the work you have completed at the University of Miami. The only exception to this policy is for determining whether a student qualifies for honors or has met the minimum grade point requirement at the time of graduation. For graduation purposes, cumulative grade point average is defined as either the average of all grades earned at the University of Miami or the combined average of all graded work taken at the University of Miami and elsewhere whether or not the transfer work is accepted toward a degree at the University of Miami, whichever is lower.

Quality points per credit are awarded as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Quality Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.00</td>
</tr>
<tr>
<td>A</td>
<td>4.00</td>
</tr>
<tr>
<td>A-</td>
<td>3.70</td>
</tr>
<tr>
<td>B+</td>
<td>3.30</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
</tr>
<tr>
<td>B-</td>
<td>2.70</td>
</tr>
<tr>
<td>C+</td>
<td>2.30</td>
</tr>
<tr>
<td>C</td>
<td>2.00</td>
</tr>
<tr>
<td>C-</td>
<td>1.70</td>
</tr>
<tr>
<td>D+</td>
<td>1.30</td>
</tr>
<tr>
<td>D</td>
<td>1.00</td>
</tr>
<tr>
<td>E (Prior to Fall 1995)</td>
<td>0.00</td>
</tr>
<tr>
<td>IE**</td>
<td>0.00</td>
</tr>
<tr>
<td>F (Effective Fall 1995)</td>
<td>0.00</td>
</tr>
<tr>
<td>IF</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Courses marked with an “IE” or “IF” count as credit attempted but are not counted in credits earned and do not carry quality points.*** Credits marked CR are counted as credits earned but are not counted in credits attempted and do not carry quality points. Courses marked with the symbols I, IP, W, NC, and NG do not carry credits attempted, credits earned, or quality points.

The grade point average is determined by dividing the total quality points earned by the total credits attempted.

Military service credit, some foreign university credit, correspondence course credit, credit by examination, etc., are not awarded quality points and do not enter the computation of the grade point average.

* Faculty Senate legislation #2000-24(B)
** Faculty Senate legislation #83032(B)
*** Faculty Senate legislation #85001(B)
**** Faculty Senate legislation #85005(B) and #97001(B)
***** Faculty Senate legislation #2001-29(B)
HONOR CODE

The Honor Code, initiated at the request of the Undergraduate Student Body Government, ratified by student referendum, approved by the Faculty Senate, by the President of the University, and administered by students, protects the academic integrity of the University of Miami by encouraging consistent ethical behavior among its undergraduate students. The Code provides standards that prohibit all forms of scholastic dishonesty, including cheating, plagiarism, collusion, and falsification or misrepresentation of experimental data. The Code covers all written and oral examinations, term papers, creative works, assigned computer related work, and any other academic work done at the University by an undergraduate student.

All undergraduate students are responsible for reading, understanding, and upholding the Honor Code. Signed pledges are required for written work submitted for evaluation, but the absence of a signed pledge does not free a student from the ethical standards required by the Code. Procedures for dealing with infractions of the Code, including provisions for appeals, are printed in the text of the Honor Code. Copies may be obtained from the Office of the Dean of Students or from the office of the Undergraduate Student Body Government, or on-line at www.miami.edu/honor-council.

In keeping with the traditional prerogatives of university faculties, nothing in the Code infringes on the faculty’s assignment of grades undertaken in a class. Instructors are informed when students have been found guilty of infractions involving their classes. Courses in which students have been failed for academic dishonesty may neither be dropped nor repeated under the terms of the freshman repeat rule.

The Dean’s List

The Dean’s List is composed of those undergraduate students who are enrolled in a degree-seeking program and have attained high scholastic achievement for the semester. To attain the Dean’s List, a student must, for the semester:

1. have registered for and have completed 12 or more graded credits (excluding the credits earned in courses taken for credit only);
2. have attained a quality point average of 3.50 or higher for the semester;
3. have no courses with pending grades (I or NG).

The Dean’s List will be announced by each college and school at the end of the semester. The Office of the Registrar will post this achievement to the student’s permanent record.

The Provost’s Honor Roll

The Provost’s Honor Roll is composed of those undergraduate students who are enrolled in a degree-seeking program and have attained a high scholastic achievement for the semester. To attain the Provost’s Honor Roll, a student must, for the semester:

1. have registered for and have completed 12 or more graded credits (excluding the credits earned in courses taken for credit only);
2. have attained a quality point average of 3.75 or higher for the semester;
3. have no courses with pending grades (I or NG).
The Provost’s Honor Roll will be announced by the Provost’s Office. The Office of the Registrar will post the achievement to the student’s permanent record, and distribute the Provost’s Honor Roll Certificate.

The President’s Honor Roll

The President’s Honor Roll is composed of those undergraduate students who are enrolled in a degree-seeking program and have attained the highest possible scholastic achievement for the semester. To attain the President’s Honor Roll a student must, for the semester:

1. have registered for and completed 12 or more graded credits (excluding credits earned in courses taken for credit only);
2. have attained a quality point average of 4.0 for the semester;
3. have no courses with pending grades (I or NG).

The President’s Honor Roll will be announced by the Office of the Registrar who will post the achievement to the student’s permanent record, and distribute the President’s Honor Roll Certificate.
GRADUATION

DIPLOMAS AND TRANSCRIPTS

No diplomas or official transcripts are released from the Office of the Registrar without the approval of the Office of Student Account Services.

Official transcripts are issued only upon receipt of a secure electronic request through a student’s myUM account or a written request from the student and upon payment of the appropriate transcript fee.

Unofficial transcripts are available free of charge on myUM or for a fee if ordered in the Office of the Registrar, 121 UC. Those ordered in the Office of the Registrar will be available for pick-up within one week after the request is submitted.

GRADUATION AND DEGREES

It is the responsibility of the student to be sure he/she makes satisfactory progress toward, and fulfills requirements for, the degree he/she seeks. He/she may obtain help in the office of his/her Academic Dean.

To receive a Bachelor’s degree from the University, the student must earn at least 120 semester hours of credit (more in some schools), with a C average (2.0) or better as well as a C average for all work done at the University of Miami.

Students must also meet all of the degree requirements of their respective schools and should not expect requirements in composition, mathematics, foreign languages, or other subject areas to be waived for any reason.

- Each student must complete the final 45 credits that are applied to his or her baccalaureate degree in residence at the University of Miami.
- In addition, each student must complete at least half of the credits specified for his or her major in residence at the University of Miami.
- Not more than 30 hours of correspondence work and extension work combined will be accepted toward a degree, and neither correspondence nor extension work may be credited as a part of the last 45 hours of the student’s program.
- Not more than 30 hours of credit based on military experience will be awarded toward the degree.
- Credits earned in a manner other than by course registration, i.e. proficiency examination, CLEP, placement tests, etc., may not be used to meet the final 45 credit hour residency requirement, however such credit by examination may be earned while the student is enrolled in the courses needed to meet the final 45 credit-hour residency requirement.

Dual Degree

- To obtain two different undergraduate degrees, a student must complete all the requirements for each degree.
- A second undergraduate degree on the same level requires a different major and a different minor.
- If the degrees are in two different schools, a student must meet the requirements with distinctly different majors and minors, wherever applicable, in each school.
Students must obtain approval from the Office of the Senior Vice Provost and Dean of Undergraduate Education to pursue dual degrees in different schools.

As a general rule, college credits more than 12 years old are not recognized for degree purposes. Students in this category should consult their academic deans. A student must apply for graduation on myUM during the semester in which they expect to graduate.

A diploma must be issued in the name on the student’s academic record. Addition or omission of a middle name is acceptable. The addition of a middle name will be acceptable only as it appears on the student’s application for admission. If the middle name is not on the application or if the student wants another version, documented proof of a legal name change must be presented to the Office of the Registrar located in the University Center, Room 121.

The last date on which application may be made for each graduation period is published in the Academic Calendar. The academic deans are the only officers authorized to approve placing the student’s name on the candidate degree list.

GRADUATION HONORS

University Honors (summa cum laude, magna cum laude and cum laude) will be determined by a minimum GPA unique to the school or college from which the student is graduating.

The GPA required will change each academic year and will be based on the cumulative GPA of the previous year’s graduating class.

Visit the Honors Program and Office of Academic Enhancement website at www.miami.edu/honorsprogram for specific GPA requirements each academic year to determine eligibility for graduation with University Honors.

The top 5% of the graduating class will receive summa cum laude within each individual school or college; the next 10% will receive magna cum laude, and the next 10% cum laude.

Eligibility for University honors for each student is determined by the lower of two GPAs:

1. UM cumulative graduation GPA
2. Combination GPA (UM cumulative graduation GPA + Transfer GPA)

A student must meet the required GPA by the completion of the final semester within his/her school or college to be eligible to graduate with the honor.
STUDENT STATUS

ACADEMIC BANKRUPTCY

Students entering college sometimes perform at an unacceptable academic level. They either drop out or are dismissed. Some individuals with this experience re-evaluate their educational goals and desire to return to college. Their academic record, however, may present an insurmountable obstacle. In order to be considered for academic bankruptcy, a student’s combined college grade point average must be below 2.00 as calculated by the Office of Admission.

Undergraduate students in this category who want the opportunity for a fresh start at the University without this handicap may apply for admission or readmission with the request that their prior academic record be disregarded.

Application for Initial Admission to the University with Academic Bankruptcy

The applicant must apply to the Office of Admission and:

1. must have been admissible to the University as a senior in high school,
2. must have attended an accredited institution for at least one year and must not have attended any college or university for the preceding six months, and,
3. must not be admissible to the University based on his or her college-level work.

Application for Readmission to the University with Academic Bankruptcy

A University of Miami student who has dropped out or who has been dismissed may request Academic Bankruptcy on meeting these conditions:

1. The student must apply to the Office of the Registrar.
2. At least six months must have elapsed since the end of the semester in which the student was last in attendance at the University of Miami.
3. Detailed written evidence must be presented to the school in which reacceptance is sought, showing that the conditions or factors that caused the poor performance have changed sufficiently, so that there is a reasonable expectation of future satisfactory performance.

Conditions of Approval

1. If Academic Bankruptcy is approved, no course credits earned previously will be displayed on the transcript for credits attempted, credits earned, or quality points earned; however, all grades earned previously will remain on the transcript.
2. Readmission applicants with approval from the dean of the accepting school, may have Academic Bankruptcy apply only to those credits taken by the student when last in attendance at the University of Miami, so that credits earned at another institution subsequent to the date the student last attended the University are not affected.

Academic Bankruptcy can be granted only once for any student.
CERTIFICATION OF ENROLLMENT

Students who require certification of enrollment for insurance or education loan purposes may obtain an enrollment letter via their myUM account or by submitting a request in writing to the Office of the Registrar. Students will be certified as currently enrolled once they have met their financial obligations. If a student is delinquent in paying his/her tuition and fees statement balance and/or Monthly Payment Plan, the University will not process transcript and/or diploma requests. Course selection/modification will not be permitted for any previous, current or future semesters. The student is not considered enrolled during the term in question, which means that certification of enrollment cannot be provided for insurance, student loan deferment or repayment purposes. Non-payment also means the student is ineligible for financial assistance awarded for the term in question.

A late payment fee will be assessed on all delinquent accounts.

Students who require enrollment certification for scholarship purposes only, will be certified as course selected, until financial obligations are met.

CLASSIFICATION OF STUDENTS

Students are classified in three ways:

a. by course load (full- or part-time);
b. by objective (degree sought, non-degree, transient, audit, etc.);
c. by year.

By Course Load

A student is a full-time student if he/she carries not less than the minimum normal load, 12 semester hours per semester in most schools, nine semester hours in the Graduate School (please refer to the Graduate section for exceptions). The minimum semester hour credit loads in a summer session will vary for each category, according to the length of the sessions. (A typical full-time class schedule for fall and spring semesters not requiring override approval from an advisor consists of 15 semester hours. In some cases, students are recommended to enroll in fewer than 15 credits.) Please refer to the university’s full-time/half-time policy located at www.miami.edu/registrar. For spring semester, Intersession courses can be included when evaluating full-time status. It is important to note that tuition charges for Intersession courses typically are separate from and in addition to charges for the spring semester. Full-time status may vary from one college or school to another. Students should consult with the dean of his/her college or school for details.

By Objective

A degree student is one whose immediate educational objective consists wholly or principally of work normally credited to a University of Miami bachelor’s or higher degree. To qualify for this status, a student must meet the standards for admission.

A non-degree student is one who is not pursuing a degree program. Such students are those who, although eligible for degree candidacy, have requested permission to take a limited or special selection of credit courses without regard to requirements for a degree. This classification includes high school graduates and students with previous college credit
a. who do not want degree status;
b. whose applications for degree status are incomplete;
c. who are taking work toward teacher certification;
d. who are workshop applicants;
e. who are visiting summer school students.

(Students under 21 years of age who have not completed high school will not be admitted to this status.) Non-degree students are sub-classified as transient, special, etc.

An undergraduate non-degree student may petition the Director of Admissions to have his/her status changed to that of degree student. Up to 30 credits earned in non-degree status may be applied towards a degree, but only to the extent approved by the appropriate academic dean. It is therefore important that the degree student identify himself/herself as such, early in his/her program.

UNDERGRADUATES TAKING GRADUATE COURSEWORK

Undergraduates Taking Graduate Coursework. University of Miami undergraduates within 30 credits of meeting the requirements for the Baccalaureate Degree may be considered for concurrent admission to graduate study in non-degree graduate status, and in this status may take and receive credit for graduate courses, while completing the requirement for the baccalaureate. The application may be found at https://www6.miami.edu/grad/forms/ApplicationforUndergraduatestoTakeaGraduateCourse.pdf.

Admission to Graduate Status requires:

1. Must have a minimum of 3.000 G.P.A.
2. The submission of an Undergraduates to Take a Graduate Course form (which can be obtained at the Graduate School) which will not require the application fee;
3. The written approval of the Chairman of the Department, the Dean of the Undergraduate School or College, and of the Graduate Dean prior to registration on the form.

Admission to Graduate status does not automatically admit the student, upon graduation, to status as an applicant for a graduate degree at the University of Miami.

The graduate credits earned may NOT be used to meet undergraduate graduation requirements or be used to meet the 120 credit hour requirements at the University of Miami.

No more than six (6) hours credit may be taken in one semester, and no more than a total of twelve (12) hours credit may be taken while in Graduate Status. Students may take no more than 13 credits of combined undergraduate and graduate courses per semester.

Students electing Graduate status must register and be processed centrally at the Office of the Registrar, Whitten University Center, Room 121.
Transient Student

A transient student is one who is enrolled at the University of Miami with the sole intention of using credits earned toward graduation elsewhere.

Audit Student

An audit student is one who enrolls as an observer or listener only. Auditing is allowed only when there is space available in the class. Audit status may be restricted by the Dean in the case of laboratory, studio or performance courses where audit status is not appropriate. Audit students receive no credit, do not prepare written assignments or take examinations, are not eligible for residence in campus residence halls, and do not receive student privileges except for the use of the library. No entries are made on the permanent academic record for audited courses.

Students wishing to change from audit status to credit status must obtain all necessary approvals within two weeks following the last day of registration for Fall and Spring semesters and no later than the fifth class day following the last day of registration for Summer Sessions. No changes except withdrawals from the course are permitted after this time.

Note: Fee for auditing a course is non-refundable. Please refer to financial information section of the bulletin.

By Year

A freshman is a degree student who has earned 0 to 29 credits.
A sophomore is a degree student who has earned 30 to 59 credits.
A junior is a degree student who has earned 60 to 89 credits.
A senior is a degree student who has earned 90 credits or more.

ELIGIBILITY FOR UNIVERSITY EXTRACURRICULAR ACTIVITIES

Full participation in University-sanctioned extracurricular activities and organizations is open to all full-time students who are not on academic probation and who have been assessed the Student Activity Fee. Extracurricular activities include, but are not limited to the following: academic, athletic, dramatic, or musical organizations or teams; student organizations registered with the Committee on Student Organizations (COSO); fraternities and sororities; student publications; program boards; and University committees.

Students on probation may participate in any activity required as partial fulfillment of their degree program; may attend meetings of organizations; and may play intramural sports. They may not otherwise compete, perform, or hold a leadership position. At the beginning of each fall semester, the activity’s faculty or staff advisor or appropriate committee chairperson shall determine with the Office of the Provost the eligibility of each participating student. Some activities apply stricter standards, and may monitor academic progress and review eligibility during the academic year. Students should consult with the individual activity for specific requirements.
READMISSION

Undergraduate students who have not attended the University for at least one semester should request readmission through the Office of the Registrar no later than two weeks before the beginning of classes, in the semester they wish to re-enroll. Readmission to the University is contingent upon approval of the Dean of the school/college the student is applying to and clearance from the Office of Student Account Services.

International students who seek readmission must receive clearance from International Admission and submit a bank letter to receive an I-20 from International Student and Scholar Services.

Students who have attended another college or university since they were last enrolled at the University of Miami, will be required to provide a transcript of their work. Failure to disclose all prior institutions attended may result in disciplinary action.

A student who is placed on the bachelor’s degree candidate list for a given semester will not receive registration materials for any subsequent semester until the student applies for readmission or admission to a new program. A candidate may wish to continue his/her studies in one of the following situations:

1. If the student fails to graduate and further registration is needed, they must delete their application for graduation in myUM and within twenty-four hours, registration for subsequent semesters or sessions should be available. Students should contact the Office of the Registrar if they experience problems.
2. If the student graduates and wishes to pursue a second bachelor’s degree, the student must apply for readmission, stating his/her new degree objective.
3. If the student graduates and wishes to take additional course work without a degree objective, the student must apply for unclassified status.

Proof of immunization must be provided to the Student Health Service before readmission to the University of Miami. Failure to do so may prevent you from registering for classes.

INACTIVE STATUS

Inactive status is for undergraduate, degree-seeking students who intend, and qualify, to re-enroll at the University of Miami after leaving the university for a designated period of time. Students interested in this option may obtain further information at www.miami.edu/registrar or by visiting the Office of the Registrar.

NON-UM PROGRAMS

Students who study through a non-UM program, domestic or study abroad, and would like to have those credits applied toward their UM degree, should apply for Non-UM Program status. Students may obtain the appropriate form and information through their Academic Dean and/or advisor.
STUDENT IDENTIFICATION NUMBERS

All students at the University of Miami will receive an identification number that is unique to them. This number supplements the social security number, which is also required by the university in order to provide information to the federal government and approved agencies. Access to social security numbers is limited to staff who have a legitimate need for that information.

TRANSFERS BETWEEN SCHOOLS AND COLLEGES

Undergraduate students who have compiled fewer than sixty (60) credits may transfer between schools and colleges provided that such students:

1. demonstrate their academic admissibility to the new program (as defined by class rank and SAT scores) at the time of their original matriculation at the University;
2. satisfy any special criteria required for admission by a particular program (e.g., auditions in the arts, portfolios in architecture, etc.); and
3. obtain the approval of the Dean of the receiving school or college.

It is a general policy of the University that students admitted to degree seeking status may not transfer to an unclassified status.

Students who have compiled 60 or more credits with an average of 2.0 or higher and who have satisfied all of the above three conditions may be eligible to transfer between schools and colleges pending space availability and additional program requirements.
ADMISSION

The University of Miami is a member of the National Association for College Admission Counseling and subscribes to its Statement of Principles of Good Practice.

ADMISSION TO THE FRESHMAN CLASS

The Admission Committee reviews applications and bases admission decisions on the following factors:

- **The Secondary School Record.** The applicant must be in the process of completing graduation requirements at a regionally accredited secondary school or must be a graduate of an accredited secondary school. The applicant must have successfully completed a solid college preparatory program including English, Mathematics, natural sciences, social sciences and foreign language.

- **Standardized Tests.** Official results of the SAT or ACT must be submitted by all applicants. The results of these tests, together with the secondary school record, provide a better measure of the ability of a candidate to perform college level work successfully than can be obtained by either measure alone.

- **The Counselors Evaluation Form.** This form is to be completed by the applicant’s secondary school counselor and includes rank in class, test score information, and an evaluation of potential for academic success in the student’s area of interest.

- **The Essay.** Since each applicant is considered individually, the Essay provides the opportunity to present information that may assist the Admission Committee as it evaluates the application for admission.

See admission procedures for freshmen

Admission of transfer students

Transfer admission may be granted in most fields of study to students who have earned credit from other regionally accredited colleges or universities. Courses completed with **passing grades of C or higher** at other colleges and universities and acceptable for academic credit by the University of Miami, will be verified, and where appropriate, will be translated into University of Miami equivalents by the Office of Admission. However, the Dean of the College or School within the University from which the student plans to graduate determines which transferred courses may be counted toward meeting graduation requirements of that College or School.

**Transfer of credits to UM**

Work taken at other institutions will appear on the University of Miami transcript in separate entries as:

a. The total number of transferable credits attempted and quality points earned, regardless of grades, and

b. The total credits transferred, which shall be the total credits for which a grade of C or higher was earned.
Note: Only the transfer totals earned are added to the University of Miami totals. Total credits attempted and quality points earned elsewhere are not included in the University of Miami totals.

The University does not accept transfer credit for courses in which a grade of C- and below (or the equivalent grade) was earned. However, grades of C-, D, and F are used to calculate the transfer admission grade point average.

Credits are not transferred from institutions not accredited by the appropriate regional accrediting association. Limited exceptions may be made with the approval of the Dean in the College or School of the student’s major. Credits transferred from institutions not in existence long enough to attain regional accreditation must be validated by the attainment of a C average or better in the first 12 credits of course work taken at the University of Miami.

The University does not have a coursework forgiveness policy. The grades of any repeated courses will be averaged.

A student may not repeat a course in which a grade of C or higher has been earned. This is considered an illegal repeat.

Upper division course requirements (300 level or above) at the University may not be satisfied with community college courses.

After being accepted and enrolling, a student must submit any final college transcripts with grades, AP, IB or CLEP examination scores for review by the end of the first semester of enrollment. Any documents listed above which are submitted after this time period will not be reviewed and credit will not be awarded.

**Required credits in residence at the University of Miami**

A student transferring credits from a 2-year community or junior college (this being the last school attended) must complete a minimum of 56 credits in residence at the University of Miami to earn an undergraduate degree.

A student transferring credits from a 4-year college or university (this being the last school attended) must complete a minimum of 45 credits in residence at the University of Miami to earn an undergraduate degree.

At least half of the credits required for the chosen Major or Minor must be completed at the University of Miami.

See [Admission procedures for transfer students](#)
ADMISSION OF UNDERGRADUATE INTERNATIONAL STUDENTS

ELIGIBILITY FOR ADMISSION

ADMISSION PROCEDURES FOR INTERNATIONAL STUDENTS

EDUCATIONAL DOCUMENTS

Diplomas, Certificates
Copies should be enclosed with the application. Students from countries following the British educational system must submit certified photocopies, or ask the examinations council to mail confidential results to the University of Miami. Reports of scores in school-leaving examinations (e.g., Baccalaureate) must also be submitted.

Transcripts, Statements of Marks
A transcript must contain the following information: subjects studied; marks (grades) awarded; length of class periods; number of periods per week for each subject; and grading scale with minimum passing mark. Year-by-year records of marks should be sent to the University of Miami directly from U.S. institutions. Certified records from foreign institutions may be submitted by applicants, but the University may sometimes insist that such transcripts be sent directly to the University of Miami from the issuing institutions. All secondary and tertiary transcripts must be submitted.

English Translations
Documents in a language other than English must be accompanied by certified English translations. Notarized translations will not be accepted. Translations supplement but do not replace original documents. Please remember to send both.

Syllabus of university study (description of each course or subject studied accompanied by certified English translations. Notarized translations will not be accepted).

A current (within the past six months) bank or government sponsorship letter guaranteeing payment for tuition and fees, books, room and board, medical insurance and personal expenses for one calendar year (two semesters and two summer sessions) is required.

EXAMINATIONS FOR INTERNATIONAL STUDENTS

All international students whose native language is not English, including those applying for transfer from U.S. institutions, are required to submit the results of the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS). The TOEFL code for the University of Miami is 5815.
The SAT score report is **not required and should not be submitted for admission consideration** from applicants who are attending schools outside the United States. Applicants should only submit an SAT score report if they qualify for merit scholarship consideration. The minimum combined score required for scholarship consideration is 1300 (critical reading and math sections only).

Please see the [TOEFL Score Requirements](#).

Conditional admission: Academically qualified applicants who are unable to take the TOEFL, or who have scored less than the required minimum, may be offered admission to undergraduate programs with the condition that they successfully complete level five of the University of Miami Intensive English Program or obtain a 550 TOEFL and higher. University of Miami TOEFL code number is 5815.

Institutional TOEFL scores are designed for academic placement use at the University of Miami. Those needing TOEFL for admission to the University of Miami or for use elsewhere should take the TOEFL iBT instead. Visit [www.ets.org/toefl/](http://www.ets.org/toefl/) for more information about the TOEFL iBT.

Please see the [IELTS Score Requirements](#).

IELTS is the International English Language Testing System. It measures ability to communicate in English across all four language skills – listening, reading, writing and speaking – for people who intend to study or work where English is the language of communication.


**PROGRAMS OF STUDY**

International students are eligible to apply for all programs offered at the University of Miami. It should be noted that medicine and law are studied at the graduate level in the United States, and it is therefore inappropriate for undergraduate international applicants to request these programs.

**FINANCIAL INFORMATION**

The University of Miami has no financial assistance for international students other than academic scholarships. International students must provide funds for all of their expenses during the entire period of study, including travel and vacations. Students who would not be able to cover their expenses are best advised not to apply for admission.
EARLY ADMISSION

A limited number of carefully selected students who are currently enrolled in high school and who have completed three years of study may be admitted to the University as freshmen. Early admission applicants typically have a very strong academic background and demonstrate a mature character.

Students who wish to apply under Early Admission must have the support of his/her parents, guidance counselor, and high school. Early applicants must also schedule an interview with the Director of Admission.

Early Admission applicants must submit official high school transcripts, SAT or ACT examination results, Counselor Evaluation Form and Essay as part of the admission process.

Early Admission applicants will be notified of an admission decision by June 1 or after receipt of grades from the final high school year completed.

Since every applicant must be appraised individually, no general qualifications can be listed. Students interested in early admission may send inquiries and requests for applications to the Office of Admission.

ADVANCED PLACEMENT AND/OR CREDIT GRANTED TOWARD GRADUATION

The University allows students to receive college credit toward graduation from the following programs: Advanced Placement, International Baccalaureate, Dual Enrollment, and College Level Examination Program. To have Advanced Placement, International Baccalaureate, or College Level Examination Program credits evaluated, the student must submit an official test result report to the Office of Admission. The University of Miami does not give credit for CLEP Foreign Language and General Examinations. Students taking Dual Enrollment courses (college courses taken while still in high school) must submit an official college transcript for review of potential transfer credit. Please refer to the transfer student section for requirements to transfer college coursework.

A student must submit AP, IB, Dual Enrollment transcripts or CLEP results no later than the end of the first semester of enrollment for review. Documents submitted after this time period will not be reviewed and credit will not be awarded.

The University will accept not more than 60 credits from these programs to count toward the 120 credits required for graduation.

SUBMITTING GED SCORES

An applicant may apply to the University upon completion of the GED in lieu of completing high school. When applying with the GED, the applicant must submit official high school transcripts up to the time of withdrawal, as well as the official GED score report and diploma.

Applicants submitting the GED must achieve the following scores to be considered for admission. These scores should be considered a guideline and do not guarantee admission to the applicant.
For exams taken in English:
Overall score of 2800
No subscore below 500

For exams taken in any language other than English:
Overall score of 3000
No subscore below 600

It is strongly suggested that applicants submitting the GED in any language other than English also submit a TOEFL score.

NON-DEGREE ENROLLMENT

ADULT STUDENT ACCESS PROGRAM (A.S.A.P.)
Students may take up to 30 credits in an undergraduate, non-degree seeking category, which may be applied to a degree program, after all application and degree-seeking requirements are met. In order to be enrolled in this category, students submit a one-page application and no other documents or transcripts; academic achievement is evaluated after 12 credits are earned. A 2.5 G.P.A. is required to continue in the program beyond 12 credits.

Students may take up to 6 credits maximum in a graduate, non-degree seeking category which may be applied to certain degree programs, after all application and degree seeking requirements are met. However, not all graduate departments participate in this program. In order to enroll in this category, students submit a one-page application and no other documents or transcripts, after securing the written permission of the participating graduate department and the Dean of the Graduate School. The application for enrollment may be found on the Web at www.miami.edu/asap.

For more information, contact: The Adult Student Access Program, Division of Continuing Studies, University of Miami, P.O. Box 248005, Coral Gables, FL 33124-1610, (305) 284-2727.
FINANCIAL ASSISTANCE

The Office of Financial Assistance Services administers federal, state, private and University financial assistance programs. Student employment, including the Miami Commitment Program, is managed by the Office of Student Employment.

FINANCIAL ASSISTANCE SERVICES

It is the purpose of the Office of Financial Assistance Services to provide needy and/or academically qualified students with financial aid in the form of scholarships, grants, loans and work programs to the extent that resources are available. In order to make the best use of limited funds, awards often consist of a combination of resources.

In addition, professional staff members are ready to help all students plan for the most efficient use of their financial resources for education.

Underlying the awarding of need-based financial assistance is the philosophy that the student and family have the primary responsibility for educational costs. Need-based financial assistance serves to supplement these primary resources.

- Students who require financial assistance in order to attend the University should apply for assistance each academic year.
- Candidates for admission should indicate their interest in financial assistance by checking the box provided for that purpose in the application for admission.
- The U.S. Department of Education’s Free Application for Federal Student Aid (FAFSA) on the Web is used to determine eligibility for assistance based on need. The FAFSA must be completed for each academic year.
- Entering freshmen should submit their FAFSA so that it is received by the federal processor by the February 1 preference date.
- Entering transfer and all graduate students should submit their regular or renewal FAFSA so that it is received by the federal processor by the March 1 preference date.
- Continuing undergraduate students should submit their regular or renewal FAFSA so that it is received by the federal processor by the February 1 preference date.
- Our office recommends the use of estimated financial information when completing the FAFSA on the Web in order to assure the February 1 preference date is met. Any estimated information must be updated by the applicant using FAFSA on the Web once final figures are available.

Financial aid applications are accepted throughout the year but it is important to note that the appropriate preference date for receipt of aid applications must be met. A new FAFSA on the Web must be submitted for EACH academic year.
STANDARDS OF ACADEMIC PROGRESS (Undergraduate and Graduate)

Federal Aid Semester Review

- In compliance with federal financial aid regulations, the University of Miami requires satisfactory progress towards a degree as an eligibility requirement for federal financial assistance.

- This policy is applicable to all undergraduate, graduate and doctoral students receiving financial aid through federal aid sources, including the Federal Parent Loan for Undergraduate Students (PLUS).

- At the end of each semester, the Office of Financial Assistance Services reviews the academic progress of all University of Miami financial aid recipients.

- If it is determined that a student is not making satisfactory academic progress at the end of the semester, a notification is sent to the student. The student will be placed on financial aid warning for one semester. Aid will not be withdrawn for the subsequent term, but at the end of that term, the student’s academic record will be reviewed by OFAS and appropriate renewal or termination actions will be taken. Notification will be sent to the student detailing information on the appeal process.

- Federal academic progress policy is subject to change based on changes made by the U.S. Department of Education.

Credit Requirements for Federal Aid

- A student must have earned at least 75% of the total hours attempted during his/her overall academic career. Undergraduate and graduate level credits cannot be combined to meet the 75% standard; however, hours transferred into the University of Miami are used in the calculation. The percentage of earned hours is calculated by dividing earned hours by all attempted hours. Rounding does not apply.

(e.g.: Student completes 18 of 24 attempted hours. Percentage complete is 18/24=75%)

- Withdrawals, incompletes, audits, and Fs are attempted but not considered earned hours.

- Hours transferred in to the University of Miami will be counted as hours attempted and hours earned.

- Reinstatement of aid eligibility can be obtained by earning additional University approved credits, achieving the 75% completion standard, or appealing as outlined later in this section. The University reviews progress at the end of each semester. Aid eligibility will be restored upon determination that the progress requirements have been met.
• Graduate students must be enrolled at least half-time in order to receive federal financial assistance. A minimum of 5 graduate hours constitutes at least half time enrollment at the graduate level. The only exception to this credit requirement is enrollment in any of the 700 level research courses. Students enrolled in any of these courses are considered full-time and are eligible for federal loans.

**UM Need-based Assistance Review**

• In compliance with federal financial aid regulations, the University of Miami requires satisfactory progress towards a degree as an eligibility requirement for financial assistance.

• This policy is applicable to all undergraduate students receiving financial aid through university sources.

• At the end of each Spring semester, the Office of Financial Assistance Services reviews the academic progress of all University of Miami financial aid recipients.

• The academic records from both the fall and spring semesters are considered. If at that time it is determined that a student is not meeting the standards of academic progress for renewal of regular financial assistance, a written notification is sent to the student. The notification includes information on the appeal process.

• Students granted a one semester conditional appeal for University of Miami Grants by the Standards of Academic Progress Committee will be reviewed at the end of that semester.

**Credit Requirements for UM Need-based Assistance**

• A student must have earned at least 75% of the total hours attempted during his/her overall academic career. Undergraduate and graduate level credits cannot be combined to meet the 75% standard; however, hours transferred into the University of Miami are used in the calculation. The percentage of earned hours is calculated by dividing earned hours by all attempted hours. Rounding does not apply. (e.g.: Student completes 18 of 24 attempted hours. Percentage complete is 18/24=75%).

• Withdrawals, incompletes, audits, and Fs are attempted but not considered earned hours.

• Hours transferred in to the University of Miami will be counted as hours attempted and hours earned.

• Reinstatement of aid eligibility can be obtained by earning additional University approved credits or appealing as outlined later in this section. The University reviews progress once a year at the end of the spring semester. A student who completes courses that meet the requirements prior to the spring semester review may request, in writing, a review of their progress in advance of the end of year review. Aid eligibility will be restored upon determination that the progress requirements have been met.

• Freshmen (0-29 credits) new to the University will be allowed a one academic year adjustment period.
Cumulative Grade Point Average Requirement for all Federal Aid and UM Need-based Assistance

Undergraduate Students
All undergraduate students must meet and maintain the University of Miami credit and cumulative grade point average (CGPA) requirements to maintain satisfactory academic progress. The criteria listed below must be met to receive federal and institutional financial assistance administered by the Office of Financial Assistance Services.

<table>
<thead>
<tr>
<th>Semester Hours Earned</th>
<th>Minimum Cumulative G.P.A.</th>
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<tbody>
<tr>
<td>0 to 32</td>
<td>1.7</td>
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<tr>
<td>33 to 64</td>
<td>1.8</td>
</tr>
<tr>
<td>65 to 96</td>
<td>1.9</td>
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<tr>
<td>97 +</td>
<td>2.0</td>
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</tbody>
</table>

** - This does not include University of Miami scholarships and State of Florida financial aid. State of Florida financial aid and University of Miami academic scholarships have their own CGPA requirements.

Graduate and Doctoral Students
All University of Miami graduate and doctoral students must maintain a minimum 3.0 cumulative grade point average (CGPA). Graduate students who fail to meet the minimum credit or cumulative grade point average requirements have failed to meet the satisfactory academic progress standards established by the University. Those in violation of the satisfactory progress eligibility requirements will be notified in writing of their eligibility status and right of appeal.

Maximum Period of Eligibility for All Financial Assistance Awards

- Degree-seeking undergraduate and graduate students receiving federal aid must complete their degrees within 150% of the normal time for completion as determined by the school or college catalog under which the student was admitted. For example, if an academic program requires 120 credit hours, the student must complete the program within 180 total credit hours. Credits used in this calculation include those accepted for transfer and those attempted at the University of Miami.

- Students receiving University scholarships and need-based grants are limited to four years of eligibility (five years for five-year degrees).

- William L. Boyd, IV, Florida Resident Access Grant (BFRAG) and Florida Student Access Grant (FSAG) recipients are limited to nine semesters of eligibility.

- Graduate students entering the dissertation or thesis stage of their degree program may receive federally funded assistance for only two years. Please note that these two years are included in the maximum periods previously listed.

- Graduate students who plan to enroll in a graduate degree program should keep in mind their aggregate loan limits. For more information, go to the National Student Loan Data System (NSLDS) at www.nslds.ed.gov. This site displays information on loan amounts, outstanding balances, loan statuses and disbursements.
University Financial Assistance for Graduate Students

In order to receive a graduate assistantship, fellowship or tuition scholarship, a graduate student must:

- Be admitted unconditionally to a post-baccalaureate degree program;
- Be enrolled for full-time study; and
- Maintain a cumulative graduate grade point average of 3.0 or above.

For additional information, please visit the Graduate School Website at www.miami.edu/grad. For specific information, contact the Graduate Advisor of each program. For information regarding loan and work-study opportunities, visit the Office of Financial Assistance website at www.miami.edu/ofas.

Scholarship Review (Undergraduate only)

- At the end of each Spring semester, the Office of Financial Assistance Services reviews the academic progress of all University of Miami financial aid recipients.

- Freshmen (0-29 credits) new to the University will be allowed a one academic year adjustment period.

- Students granted a one semester conditional appeal for University of Miami Grants by the Standards of Academic Progress Committee will be reviewed at the end of that semester.

- First-time freshmen are eligible for University of Miami academic scholarships for up to eight semesters; transfer students are eligible for up to four semesters. These scholarships are good for the fall and spring semesters only. Any requests to have an academic scholarship applied to summer or mini-semester terms need to be made in writing and submitted to our office.

Credit and GPA Requirements for UM Scholarships

- Scholarship recipients must maintain a CGPA of at least 3.0 for all credits earned at the University of Miami to retain their scholarship.

- All full-time undergraduate students are required to register for and complete at least 24 (a minimum of 12 each semester) new credit hours at the University of Miami each academic year, defined as the fall and spring semesters.

- Reinstatement of academic scholarship eligibility can be obtained by earning additional University approved credits. The University reviews progress once a year at the end of the spring semester. A student who completes courses that meet the requirements prior to the spring semester review may request, in writing, a review of their progress in advance of the end of year review. Aid eligibility will be restored upon determination that the progress requirements have been met.

- Full-time undergraduate students who enroll for only one semester are required to register for and complete at least 12 new credit hours during that semester.
Withdrawals, incompletes, audits, and Fs are attempted but not considered earned hours.

Golden Drum/Ronald Hammond scholarship recipients should refer to their contract for renewal criteria provided by the Office of Multicultural Student Affairs.

 Guaranteed Scholarship

First-time freshmen awarded a University of Miami academic scholarship; automatically retain their scholarship after their first year of school. The student must maintain a minimum 3.0 CGPA and complete at least 24 University of Miami credit hours during their second academic year to guarantee their scholarship for the remaining two years of undergraduate studies.

First-year transfer students awarded a University of Miami academic scholarship is guaranteed their scholarship if they:

- have completed 24 credit hours during their first academic year,
- have maintained a minimum 3.0 CGPA, and
- have registered as a full-time student for their second year of eligibility.

Transfer students meeting these requirements will be guaranteed their scholarship for four semesters or until they graduate, whichever comes first.

Any University of Miami academic scholarship will be guaranteed for the remainder of an undergraduate student’s eligibility if they are not on probation at the end of their 4th semester (2nd semester for transfer students).

Automatic Probation and Probationary Scholarship Assistance

Freshmen that fail to meet the scholarship academic progress standards at the end of the first academic year will receive a warning and are granted an additional year of eligibility under “Freshman Forgiveness.” Sophomores that fail to meet the scholarship academic progress standards at the end of the academic year are placed on probation, and may receive the scholarship for an additional semester as a probationary award. The student’s progress is reviewed at the completion of the semester. A student that fails to meet the scholarship academic progress standards at the end of the semester loses eligibility for the award the second semester, receives notification of the loss of eligibility, and is provided information on the appeal process.

A new transfer student receiving a University of Miami academic scholarship that does not meet the scholarship academic progress requirements at the end of the 2nd semester may receive a one-year probationary award. A student that fails to meet the scholarship academic progress standards at the end of the 4th semester loses eligibility for the award, receives notification of the loss of eligibility, and is provided information on the appeal process.
A student may receive probationary scholarship assistance only once. Any student who has received a scholarship under probation must meet the standard of academic progress requirements for that scholarship assistance by the end of the probationary period in order to maintain his/her eligibility for that scholarship in the future.

STATE OF FLORIDA AID

The Florida Department of Education, Office of Student Financial Assistance, has its own standards of progress for state financial assistance.

- All Bright Futures Scholarship recipients (includes Florida Academic, Florida Medallion, and Florida Gold Seal scholarships) are eligible for up to 132 credit hours; however, eligible students may only receive up to 45 hours of credit per academic year.

- 2009-2010 high school graduates and thereafter, may receive up to 100% of his/her program of study or 120 semesters hours (or the equivalent in quarter or clock hours) toward completion of his/her first baccalaureate degree, or for up to five years from high school graduation (if the student was initially funded within three years after high school graduation), whichever comes first.

- State of Florida Aid academic progress policy is subject to change based on changes made by the Florida Department of Education.

A student must earn at least 24 credit hours (or the equivalent) if enrolled full time for the entire academic year. A student enrolled full time (12 or more semester hours or the equivalent) for only one term must earn at least 12 credit hours for that term. If a student is enrolled part time for any part of the academic year, the student must earn a prorated number of credit hours. (See below). Initial eligibility must be at least 6 credits.

<table>
<thead>
<tr>
<th>Student Funded (per term)</th>
<th>Required Earned Hours (per term)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 + credits (Full Time)</td>
<td>12</td>
</tr>
<tr>
<td>9-11 credits (Three-Quarter Time)</td>
<td>9</td>
</tr>
<tr>
<td>6-8 credits (Half Time)</td>
<td>6</td>
</tr>
</tbody>
</table>

A student that fails to meet the minimum cumulative grade point average (3.0 for Florida Academic, 2.75 for Florida Medallion and Gold Seal) will no longer be eligible for his/her Bright Futures award. Florida Academic recipients that fail to achieve a 3.0 cumulative average, but achieve at least a 2.75 cumulative average will renew at the lower Florida Medallion amount. Recipients that fail to meet the progress requirements receive notice including information on the appeal process.

- Award Reinstatement: an eligible student that did not receive scholarship funds for the last academic year (fall through spring), may request reinstatement of the award. The student must complete a Reinstatement/Restoration application available on the Florida Department of Education Office of Student Financial Assistance (OSFA)

- Award Restoration: a student that failed to achieve a minimum 2.75 and became ineligible for funding may apply for restoration in an academic year after which the 2.75 cumulative GPA requirements was met. (The 2.75 GPA must be met before the fall term for which the student is applying.) The student must complete a Reinstatement/Restoration application available on the Florida Department of Education Office of Student Financial Assistance (OSFA) website at www.FloridaStudentFinancialAid.org.

- For 2009-10 and later high school graduates, if a scholarship is not renewed because of an insufficient GPA during their first year of funding, the scholarship may be restored in an academic year after the minimum cumulative GPA requirement is met. Students who do not meet the minimum earned hours requirement or who fail to meet the minimum GPA requirement after their first year of funding will NOT be permitted a restoration opportunity. * State of Florida Aid academic progress policy is subject to change based on changes made by the Florida Department of Education.

- Recipients of the William L. Boyd, IV, Florida Resident Access Grant (BFRAG) and Florida Student Assistance Grant (FSAG) must complete at least 24 credit hours each academic year with a cumulative grade point average of at least 2.0. Classes taken in the previous summer may be included in calculating the completed hours (credit hours earned during summer of 2011 may be combined with the credit hours earned during the 2011-2012 academic year to meet the 24 credit hour requirement).

Students that do not meet the annual minimum 24 credit hours requirement for renewal, may not receive funding the following academic year. To be eligible for renewal in a subsequent year, the student must meet the general eligibility requirements for renewal and have maintained/earned a cumulative GPA of 2.0.

Students enrolling for only one semester must complete at least 12 new credit hours while maintaining the required CGPA.
THE APPEAL PROCEDURE

Students that do not meet the academic progress requirements may submit a written appeal to request reinstatement of eligibility to receive aid. The student must complete the University of Miami’s Academic Progress Appeal Form. This petition requires the student to:

1. Submit a written explanation as to why he/she was unable to meet or maintain the academic progress requirements; and

2. Submit documentation that substantiates the student’s circumstances, such as a letter from a doctor or copies of medical bills if a student cites medical reasons for not meeting the requirements.

The appeal form may be downloaded from the financial assistance website. Submit the Appeal Form and all documentation to the Standards of Academic Progress (SOAP) Appeal Committee, c/o the Office of Financial Assistance Services. All appeals should be submitted no later than 30 days from notice of ineligibility. All appeals submitted completely and on time will be reviewed by the committee prior to the beginning of each semester. Decisions are made using the appeal documentation provided by the student in conjunction with the student’s academic record. All decisions by the committee are final.

A general description of the major financial assistance programs available through various departments as well as the Office of Financial Assistance Services can be found at www.miami.edu/ofas.
FINANCIAL PAYMENT POLICIES

Policy
All semester charges (tuition, room, board and fees) are due by the date on the Registration Billing Notification, unless an established Monthly Payment Plan contract has been finalized with the Office of Student Account Services. Previously unbilled and new charges are due and payable when incurred. A student is responsible for his/her tuition and fees upon registration. Financial registration is considered complete only when all charges are paid or when satisfactory arrangements to pay have been finalized with the Office of Student Account Services.

Consequences of Non-Payment
There are consequences to non-payment. If a student is delinquent in paying his/her tuition and fees statement balance and/or Monthly Payment Plan, the University will not process transcript and/or diploma requests. Also, course selection/modification will not be permitted for any previous, current or future semesters. The student is not considered enrolled during the term in question, which means that certification of enrollment cannot be provided for insurance, student loan deferment or repayment purposes. Non-payment also means the student is ineligible for financial assistance awarded for the term in question.

A late payment fee will be assessed on all delinquent accounts.

Course selection will not be permitted for any past due accounts including Monthly Payment Plans. A late payment fee will be assessed on all delinquent accounts.

Finance Charges
No additional charges are imposed on an account once Account Balance payments are received by the payment due date. If, however, payment is received after the payment due date, a Finance Charge is assessed. Finance charges are computed on the average daily account balance at an Annual Percentage Rate of 16%.

Deferred Payments
If financial aid funds are not available at the time of registration, the student would normally be expected to cover these payments. However, financial aid awards will be automatically deferred under the following conditions:

- The Office of Financial Assistance Services (OFAS) is provided with a source of aid (other than College Work Study or Miami Commitment) on the student's award package.
- OFAS awards the corresponding amount on the student's award package. i.e., outside scholarship information must be provided to both the Offices of Financial Assistance and Student Account Services in order to defer payment.
- OFAS allocates the guaranteed award during the semester that the disbursement should be expected.
- Final guarantees have been processed by the appropriate alternative loan lender – preliminary approvals will not result in automatic alternative loan deferments.

Examples
*Veterans Monthly Educational Benefit Checks:* An amount not to exceed the total of the checks expected to be received during the semester (for fall and spring, this is typically three checks) may be deferred. Arrangements for this type of tuition deferment must be
initiated with a representative of Veterans Affairs through the Office of the Registrar and the Office of Student Account Services. Students with VA benefits are required to sign a promissory note with the Office of Student Accounts in order to defer anticipated payments.

*International Students with Government Sponsorships:* Payment of all or a portion of charges that can be billed directly to corresponding government agencies may be deferred upon presentation of appropriate documentation from their government or embassy. In addition, international students who receive monthly stipends for living expenses from their government may (if expenses are covered by the student’s sponsor) defer a portion of their payment of their room and board charges. However, no deferment is permitted to an international student having a previous balance at the time of registration or one receiving tuition remission. Arrangements for this type of tuition deferment must be initiated with a Third Party Advisor at the Office of Student Account Services.

**Florida Prepaid Program**

The University of Miami will assist with a student’s education expenses by billing for any available Florida Prepaid College Program funding directly to the Florida Prepaid College Board. As a Florida Prepaid participant, you may authorize the University of Miami to request various payment disbursement options that best match your needs and current savings in the plan. We encourage all participants to authorize a payment that will facilitate your overall financial planning objectives for your son or daughter’s enrollment at the University of Miami.

The University of Miami requires new students to have completed the “Florida Prepaid College Program Authorization Form”. In addition to this form, all students who plan to use their prepaid funds must contact Florida Prepaid at 1-800-552-4723 option 2, and request a separate Florida Prepaid “Transfer Form”. Upon your request, Florida Prepaid will mail the Transfer Form to you. The purchaser of the plan must complete this form and return it directly to Florida Prepaid. It is necessary that Florida Prepaid have this Transfer Form on file in order for students to use Florida Prepaid funds at the University of Miami.

Questions in reference to Florida Prepaid should be sent to saccounts@miami.edu with "Florida Prepaid" in the subject line. The required authorization form for the University of Miami and an example can be downloaded from the following web site: [www.miami.edu/osas](http://www.miami.edu/osas)

**Process**

Final arrangements for tuition deferments that do not appear on Registration Billing Statements must be made with representatives of the Office of Student Account Services. For further clarification and interpretation of the University’s tuition deferment policy, contact the Office of Student Account Services. You may e-mail Student Accounts at: saccounts@miami.edu.

**Policy on previous and unpaid balances**

**Non-Payment**

The University of Miami may declare due and payable at once the sum of all past due balances. In addition, the student will be responsible for interest accrued on all past due
and unpaid amounts at the maximum rate permitted by law and any and all costs incurred by the University of Miami in enforcing its rights. The University reserves the right to withhold transcripts, diplomas, readmission, and future registration for non-payment of outstanding balances. The University’s Collection Department may also disclose the student’s outstanding indebtedness, along with other relevant information, to credit information bureaus. A non-refundable $100 reinstatement fee will be charged to reinstate each unpaid and cancelled semester.

Refund Policy

DEFINITIONS

Title IV Financial Aid or Title IV Programs refers to the following awards:

- Unsubsidized Federal Stafford Loans
- Subsidized Federal Stafford Loans
- Federal Perkins Loan, DL PLUS (Graduate Student), DL PLUS (Parent)
- Federal PELL Grant
- Federal Supplemental Educational Opportunity Grant (SEOG)
- Federal College Work Study
- State Subsidy Incentive Grants

REFUND POLICY

Students who have advised the appropriate University department of their withdrawal, through 60 percent of the semester, will receive credit for tuition and eligible financial aid refunds using a pro-rated calculation based on the percentage of the semester attended by the student. Unearned Title IV funds will be returned in accordance with the refund policy established in Section 484B of the Higher Education Act of 1965, as amended (HEA) and provided for through the Student Assistance General Provisions regulations enacted on October 7, 1998. Fees are not refundable and will not be pro-rated.

The University refund schedule does not apply to students in the following on-campus and off-campus programs: The Executive MBA, the MBA Program for Working Professionals, and the Master of Science in Professional Management. Unless the student has completed official withdrawal procedures in writing with the Graduate Business Program office prior to the beginning of a course/term, tuition will be refunded on a prorated basis based on the number of class meetings attended through the effective date of withdrawal.

No tuition refund will be granted when class attendance has exceeded 50% of class meetings. This policy supersedes any information stated in the Graduate Bulletin and other university publications.

PROCEDURE

The amount of earned tuition and financial aid will be calculated on a daily pro-rated basis. Unearned tuition will be credited to the students account. Unearned, disbursed financial aid will be charged to the students account and refunded to the appropriate financial aid programs. Students who have not completed the verification process are ineligible to receive any financial aid and therefore no financial aid will have been earned. All disbursed financial aid will be charged to the students account and refunded to the appropriate financial aid program.
The return of financial aid will be refunded to the following sources used in the specific order as noted below until the total amount of the school’s responsibility has been satisfied:

- Unsubsidized Federal Stafford Loans
- Subsidized Federal Stafford Loans
- Federal Perkins Loans
- Federal PLUS Loans (Graduate Student)
- Federal PLUS Loans (Parent)
- Federal Pell Grant
- Federal Supplemental Opportunity Grant (SEOG - Federal Portion Only)
- Any other Title IV Assistance
- State financial aid

In the event of an overpayment of unearned Title IV grants, the University will send the student a notification letter requesting payment in full or the establishment of a satisfactory payment arrangement with the University or the Debt Collection Services of the U.S. Department of Education. This notification letter will be processed within 30 days of the date of the University’s determination that the student withdrew.

If the student does not respond to the request for repayment within 15 days, the University will notify the Department of Education of any Title IV grant overpayment. If the student does not make satisfactory repayment arrangements for the repayment of Title IV grant aid, the student will then become ineligible for federal assistance on the 46th day from the date of the University’s repayment letter.

**WITHDRAWAL EXAMPLE**

A student notifies the Registrar of withdrawal on the 50th day of the semester. If the total number of calendar days in a semester were 108, the earned tuition and financial aid ratio would be 50 divided by 108 or 46.3 percent. The University would have earned 46.3 percent of the semester tuition and the student would have earned 46.3 percent of the approved federal aid that the student was originally scheduled to receive for the term. The remaining 53.7 percent of unearned tuition would be credited to the student's account. The 53.7 percent of the student scheduled or disbursed aid remains unearned and must be returned to the Federal Program. If a student remains in school until the percentage of earned financial aid is 60% or more, then federal regulations consider the student to have earned 100% of their federal aid.

**POST WITHDRAWAL DISBURSEMENTS**

If the University determines that a student is eligible for Title IV funds that have not been disbursed, grant funds that the student is eligible for will be disbursed first. Federal aid that the student is eligible for will be credited to the students account and applied against any outstanding charges.

**ANNUAL TUITION**

In cases where tuition is assessed on an annual rather than semester basis (except for special contracted programs), the refund will be treated as though tuition were assessed in two equal halves, one for each of two semesters.
Reinstatement of cancelled classes

Classes are subject to cancellation if the student fails to complete Financial Registration at the start of the semester. A non-refundable $100.00 Reinstatement Fee will be assessed on the student account in order to reinstate canceled classes.

If the student does not reinstate his/her canceled classes prior to the end of the semester, the student will not be allowed to register for subsequent semesters. The student will be allowed to register only when he/she has paid the student account balance in full, with certified funds, and has reinstated all canceled classes.

Important Note: Students who are receiving financial assistance and have had their classes canceled for the semester may lose all or part of their financial aid for that semester. Students who wish to reinstate a canceled semester must first meet with an Advisor from the Office of Financial Assistance Services to determine the aid they are eligible to keep from the canceled semester. Once the aid has been determined, and the student knows what their out-of-pocket expenses will be, final arrangements for reinstatement of canceled classes can be made with a representative of the Office of Student Account Services.

Students must be reinstated into all classes in which they initially registered. Partial semester reinstatements will not be authorized.

Payment options

The University Cashier accepts cash, personal checks, traveler’s checks, cashier’s checks, certified checks, money orders, and checks drawn against lines of credit. Personal check and credit card payments are accepted online via myUM. Bank wire transfers are also accepted.

On-Line Payments:

Web Checking Account (ACH) Payments: Free on-line checking account payments are accepted through the myUM system. Students must sign onto myUM at (www.miami.edu/myum) and select the “Student” tab. The “Financial” link from the drop down menu should then be selected followed by clicking on the “Billing and On-Line Payment” link. Subsequent on-line instructions will then be provided. Once payment is processed, a confirmation email will be sent to the student’s email address noted in the University’s database. The student’s account will then be systematically updated with the payment. Please note that this option is only available on the myUM system and is at no charge to the student.

On-Line Credit Card Payments: Students must sign onto myUM (www.miami.edu/myum) and select the “Student” tab. The “Financial” link from the drop down menu should then be selected followed by clicking on the “Billing and On-Line Payment” link. Subsequent on-line instructions will then be provided. Once payment is processed, a confirmation email will be sent to the student’s email address noted in the University’s database. The student’s account will then be systematically updated with the payment. Please note that a non-refundable 2.5% convenience fee will be added to the amount charged by our credit card service provider.
Checks and Money Orders

Payments must be in U.S. Dollars and drawn on a U.S. bank. Payments must be made payable to the University of Miami and include the student’s identification number to ensure credit to the student’s account. Post-dated checks are not accepted. IMPORTANT NOTE: Foreign drafts must be sent through a collection process requiring a 30-day process for collection purposes. Accounts will only be credited once confirmation of deposit has been received by the University’s bank. Collection fees, charged by the bank for processing these checks, will be charged to the student’s account.

Returned checks policy

All returned checks are deposited twice, automatically, and without notice. A Returned Check Fine will be assessed to the student’s account, as listed below, after the second attempt. Check cashing privileges will be canceled for those students who have three (3) or more returned checks.

A notification letter will be mailed to the maker of the check by the University’s Collection Department detailing the amount and fine for the returned check. Check cashing privileges will be restricted until cash or certified funds (money order or cashier’s check) are presented for payment. A personal check will not be accepted to replace a dishonored check.

Returned check fines (includes on-line check payments through myUM):

<table>
<thead>
<tr>
<th>Check</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; or = $800.00</td>
<td>$20.00 fee</td>
</tr>
<tr>
<td>Checks over $800.00</td>
<td>2.5% of the check amount</td>
</tr>
<tr>
<td>Checks for Monthly Payment Plan</td>
<td>$25.00 Fee</td>
</tr>
</tbody>
</table>

Wire Transfer of Funds

Wire transfer of funds for payment on an account at the University of Miami may be processed through any full service bank. Please direct the transfer to:

Bank of America, N.A.
1500 South Dixie Highway
Coral Gables, Florida 33146

ABA Routing Number: 026009593
For Credit to: University of Miami Account 5508319094
For Further Credit to: Student Name and I.D. Number

The student’s name and the student’s identification number (C#) are required in order to properly credit funds to the student’s account.
Tuition payment plans

The Office of Student Account Services offers several tuition payment options to assist students and parents. The University’s payment options are designed to provide convenient alternative plans of budgeting and paying educational costs whether or not a financial assistance award is granted.

MONTHLY PAYMENT PLAN (MPP)

Purpose: This plan allows you to divide all or part of your annual educational expenses (tuition, fees, on-campus housing, and meal plan less financial assistance) into ten convenient monthly payments for a fall/spring combined plan; five months for a fall-only plan; and five months for a spring-only plan.

Contract length: This plan is offered on an annual basis for the fall and spring semesters combined, and the fall and spring separately as noted above. The minimum annual contract for any of these plans is $2,000.

Fee: A 3% non-refundable participation fee of the amount financed is charged and included in the established monthly payments.

Conditions: Payments are due on the 1st of each month with the exception of the first payment which is due upon signing the Monthly Payment Plan Agreement. The Monthly Payment Plan is completed online at www.miami.edu/osas/mppapp.html. This online process guarantees faster processing for financial registration purposes and automatically updates applicants via email notifications.

TUITION STABILIZATION PLAN (TSP) (Undergraduates Only)

The University of Miami Tuition Stabilization Plan (TSP) allows you to pre-pay up to four years of tuition at the current tuition rate. The TSP relieves students and parents of concerns relating to future tuition increases and may also offer substantial savings in future tuition expenses. This plan does not include mandatory fees.

The TSP is a sensible alternative for families and independent students paying for tuition from existing savings or investment accounts. With increases in tuition rates at most Universities running above current inflation rates, a participant’s savings in tuition increases may more than make up for the loss of investment income.

The TSP is designed to be used by full-time students for a minimum of two consecutive academic years and a maximum of four consecutive academic years; if a student withdraws from the University, the unused tuition will be refunded without penalty as outlined in the TSP agreement.

The TSP is designed to be used by students who are (a) are enrolled in a degree-seeking four-year program on a full-time basis and (b) do not receive any financial aid.

TSP Contract Amount and Terms

<table>
<thead>
<tr>
<th>Contract Length</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-year contract</td>
<td>$79,960.00</td>
</tr>
<tr>
<td>3-year contract</td>
<td>$119,940.00</td>
</tr>
<tr>
<td>4-year contract</td>
<td>$159,920.00</td>
</tr>
</tbody>
</table>
TUITION GUARANTEE PLAN (TGP)  (Freshmen Only)

The University of Miami Tuition Guarantee Plan (TGP) is a four-year budgeting plan for families. The TGP allows families to plan for “tuition and mandatory fees” over a four-year period.

The TGP guarantees a pre-determined tuition rate increase for each of the four years and schedules payments over 44 months without interest or finance charges. A non-refundable participation fee of 3% of the plan amount is charged and included in the monthly payments. This payment plan also requires consecutive semester enrollment.

The TGP is designed to be used by students who are (a) first semester freshman; (b) are enrolled in a degree-seeking four-year program on a full-time basis and (c) do not receive any financial aid.

Note:  A) Neither plan above (TSP/TGP) covers intersession classes, housing and/or meal plan charges. These charges must be paid separately.

B) The receipt of any awards noted above will be refunded to the account holder as long as required payments are current. Adjustments to monthly payments will not be processed on either plan as these payment plans will be fixed according to tuition rates in place at the time a contract is issued.

C) As noted below, the contracted amounts for the TGP include both tuition and fees. The TSP is inclusive of tuition only.

2012 – 2013 TGP Rate
TGP Contract Amounts and Terms

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-2013</td>
<td>$41,220.00</td>
</tr>
<tr>
<td>2013-2014</td>
<td>$43,281.00</td>
</tr>
<tr>
<td>2014-2015</td>
<td>$45,445.05</td>
</tr>
<tr>
<td>2015-2016</td>
<td>$47,717.03</td>
</tr>
</tbody>
</table>

TOTAL: $177,663.08
3%: $5,329.89
Total Financed: $182,992.97

(43 payments of $4,158.93 each starting 9/1/2012 and one last payment of $4,158.98 ending 4/1/2016)
TUITION and FEES

Tuition

The basic undergraduate tuition rate covers the normal student load and is increased if the student carries an overload. Private instruction, e.g., music lessons, carries extra charges.

For tuition charges in special programs and sessions, see announcements that are published concerning these components of the University’s academic program.

The following list of charges is effective for the academic year 2012-2013.

<table>
<thead>
<tr>
<th>Number of Credits</th>
<th>Tuition (per semester)</th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td>$ 1,660.00</td>
</tr>
<tr>
<td>Two</td>
<td>$ 3,320.00</td>
</tr>
<tr>
<td>Three</td>
<td>$ 4,980.00</td>
</tr>
<tr>
<td>Four</td>
<td>$ 6,640.00</td>
</tr>
<tr>
<td>Five</td>
<td>$ 8,300.00</td>
</tr>
<tr>
<td>Six</td>
<td>$ 9,960.00</td>
</tr>
<tr>
<td>Seven</td>
<td>$ 11,620.00</td>
</tr>
<tr>
<td>Eight</td>
<td>$ 13,280.00</td>
</tr>
<tr>
<td>Nine</td>
<td>$ 14,940.00</td>
</tr>
<tr>
<td>Ten</td>
<td>$ 16,600.00</td>
</tr>
<tr>
<td>Eleven</td>
<td>$ 18,260.00</td>
</tr>
<tr>
<td>Twelve to twenty</td>
<td>$ 19,990.00</td>
</tr>
<tr>
<td>(Includes Course Fees)</td>
<td></td>
</tr>
<tr>
<td>In excess of 20, per credit</td>
<td>$ 1,660.00</td>
</tr>
<tr>
<td>No credit towards degree (audit), per course, non-refundable</td>
<td>$ 1,660.00</td>
</tr>
</tbody>
</table>

Undergraduate students carrying both undergraduate and graduate courses will be charged tuition at the rate in effect for undergraduate credits taken and appropriate fees. For example, tuition for a student carrying a total of 15 credits, of which 3 are graduate and 12 are undergraduate, would be charged at the $19,990.00 rate.

Undergraduate students taking graduate level coursework that is priced at a special level will be billed separately for these courses. Students should check with their advisors and/or the appropriate school’s department for more details on their course pricing requirements.

Full-time fees will be assessed according to student classification as an undergraduate or graduate.

The University reserves the right to change without notice tuition, fees, room and all other charges at the beginning of any academic year, and the right to change activities and board fees at the beginning of any semester.
GRADUATE STUDENTS

<table>
<thead>
<tr>
<th>(Pre-Master’, Post-Master’s, and Doctoral Students per credit)</th>
<th>$1,660.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research in Residence (720 or 750) or Continuous Registration-Master’s Study (725), per fall/spring semester</td>
<td>$1,660.00</td>
</tr>
<tr>
<td>Research in Residence (720 or 750) or Continuous Registration-Master’s Study (725), per summer session (0 Research Credit Courses)</td>
<td>$1,660.00</td>
</tr>
<tr>
<td>Audit Work (No degree credit) Tuition, per course, non-refundable.</td>
<td>$1,660.00</td>
</tr>
</tbody>
</table>

Certain programs are conducted by the University under contract with the State of Florida. Florida residents who have been accepted as students in those contract programs are required to pay current state tuition for each credit hour taken and the state provides the University with additional funds in accordance with the terms of the contracts. Students involved in state contract programs should contact the appropriate school/college to ascertain the state tuition charge per credit hour that they are expected to pay.

Fees

Some fees depend upon full-time status. This is usually determined by the sum total of semester credits carried by the student in all divisions or enrollment in certain special programs that are classified as full-time regardless of credit load. Intersession classes are included with regular fall and spring semester classes in determining the student’s full- or part-time status. This determination will also result in the billing of required fees. Fees are subject to change.

Undergraduate students are classified full-time if they enroll in 12 or more credits in a regular semester or five (5) or more credits in a summer session or if they are enrolled in a special program which is classified full-time regardless of credit load.

Graduate students are classified full-time if they enroll in nine (9) or more credits in a regular semester or five (5) or more credits in a summer session, or if they are enrolled in dissertation credits that are classified as full-time.
MANDATORY FEES

<table>
<thead>
<tr>
<th>FALL OR SPRING SEMESTER FEES (per semester)</th>
<th>Student Activity Fee</th>
<th>Athletic Fee</th>
<th>Wellness Center</th>
<th>Student Health &amp; Counseling Centers Fee</th>
<th>Student Center Fee</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate – full-time (12 or more credits)</td>
<td>$144.00</td>
<td>$66.00</td>
<td>$152.00</td>
<td>$108.00</td>
<td>$150.00</td>
<td>$620.00</td>
</tr>
<tr>
<td>Graduate, full-time (9 or more credits)*</td>
<td>$42.00</td>
<td>N/A</td>
<td>N/A</td>
<td>$108.00</td>
<td>$150.00</td>
<td>$300.00</td>
</tr>
<tr>
<td>Rosenstiel Graduate (9 or more credits)*</td>
<td>$13.00</td>
<td>N/A</td>
<td>N/A</td>
<td>$108.00</td>
<td>N/A</td>
<td>$121.00</td>
</tr>
<tr>
<td>Medical Science Graduate (0 or more credits)*</td>
<td>$13.00</td>
<td>N/A</td>
<td>N/A</td>
<td>$25.00-Med $83.00-Gables</td>
<td>N/A</td>
<td>$121.00</td>
</tr>
<tr>
<td>Law Students (12 or more credits)*</td>
<td>$59.00</td>
<td>N/A</td>
<td>$152.00</td>
<td>$108.00</td>
<td>$150.00</td>
<td>$469.00</td>
</tr>
</tbody>
</table>

* Student Health & Counseling Centers Fee is mandatory for all full time students regardless of credit load. Also mandatory for part-time students.

SUMMER SESSION FEES (per session)

| Undergraduate (Full Time 5+ Credit Hours) | | | |
|------------------------------------------|----------------------|--------------|-----------------|----------------------------------------|--------------------|-------|
| Student Activity Fee | $11.00 | | | | | |
| Student Health and Counseling Centers Fee | $54.00 | | | | | |
| Student Center Fee | $75.00 | | | | | |
| **Total:** | **$140.00** | | | | | |
| Graduate (Full Time 5+ Credit Hours) | | | | | | |
| Student Activity Fee | $10.00 | | | | | |
| Student Health and Counseling Centers Fee | $54.00 | | | | | |
| Student Center Fee | $75.00 | | | | | |
| Rosenstiel Graduate | | | | | | |
| Student Health and Counseling Centers Fee | $54.00 | | | | | |
| Medical Graduate | | | | | | |
| Student Health and Counseling Centers Fee | $41.00 | | | | | |
| Law | | | | | | |
| Student Health and Counseling Centers Fee | $54.00 | | | | | |
| Student Center Fee | $75.00 | | | | | |
You are not required to have the University sponsored health insurance plan in order to utilize the services of the Student Health Center. During the summer sessions the Student Health & Counseling Centers Fee is mandatory and is automatically added to tuition for students enrolled for 5 or more credit hours. Students who are enrolled for fewer than five credit hours during the summer must request this fee to be charged to gain access to the Student Health & Counseling Centers.

Students who are not enrolled for the current semester but intend to enroll for the next semester and graduating seniors (who wish access for one additional week after graduation), may gain access to the services of the Student Health Service after paying the Health and Counseling Centers Fee.

### Optional Fees

#### Fall or Spring Semester Fees (per semester)

<table>
<thead>
<tr>
<th></th>
<th>Student Activity Fee</th>
<th>Student Health &amp; Counseling Centers Fee</th>
<th>Athletic Fee</th>
<th>Wellness Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate Students (1 to 11 credits)</td>
<td>$144.00</td>
<td>$108.00</td>
<td>$66.00</td>
<td>$152.00</td>
</tr>
<tr>
<td>Graduate Students (0-8 credits)</td>
<td>$42.00</td>
<td>Not Optional</td>
<td>$66.00</td>
<td>$152.00</td>
</tr>
<tr>
<td>Graduate Students (9 or more credits)</td>
<td>N/A</td>
<td>N/A</td>
<td>$66.00</td>
<td>$152.00</td>
</tr>
<tr>
<td>Rosenstiel Graduate Students (0 to 8 credits)*</td>
<td>$13.00</td>
<td>N/A</td>
<td>$66.00</td>
<td>$152.00</td>
</tr>
<tr>
<td>Rosenstiel Graduate Students (9 or more credits)</td>
<td>Not Optional</td>
<td>N/A</td>
<td>$66.00</td>
<td>$152.00</td>
</tr>
<tr>
<td>Medical Science Graduate Students (0 or more credits)*</td>
<td>Not Optional</td>
<td>N/A</td>
<td>$66.00</td>
<td>$145.00</td>
</tr>
</tbody>
</table>

* Student Health & Counseling Centers Fee is mandatory for all full time classified graduate students regardless of credit load.

#### Optional SUMMER SESSION FEES (per session)*

<table>
<thead>
<tr>
<th></th>
<th>Activity Fee</th>
<th>Wellness Center fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduates</td>
<td>$11.00</td>
<td>$76.00</td>
</tr>
<tr>
<td>Graduate</td>
<td>$10.00</td>
<td>$76.00</td>
</tr>
</tbody>
</table>

*Summer fees optional for students taking less than 5 credit hours.

### Other Fees

#### Diploma Fee

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Original Diploma</td>
<td>no charge</td>
</tr>
<tr>
<td>Replacement Covers</td>
<td>$5.00</td>
</tr>
<tr>
<td>Replacement – Bachelors, Masters, Ph.D.</td>
<td>$10.00</td>
</tr>
<tr>
<td>Replacement – Law, Medicine</td>
<td>$15.00</td>
</tr>
</tbody>
</table>
TRANSCRIPT FEE

<table>
<thead>
<tr>
<th>Service</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mailed Transcripts</td>
<td>$6.00</td>
</tr>
<tr>
<td>Pick-up and Immediate Transcripts</td>
<td>$7.00</td>
</tr>
</tbody>
</table>

Note: Unofficial transcripts are available free of charge on myUM or for $3.00 each if ordered in the Office of the Registrar, 121 UC in writing. Those ordered in the Office of the Registrar will be available for pick-up within one week after the request is submitted.

FEES CHARGED BY SONHS TO STUDENTS REGISTERED FOR CLINICAL COURSES

(Annual, non-refundable, due at registration, estimated at time of publication)*

<table>
<thead>
<tr>
<th>Service</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Liability Insurance</td>
<td>$270.00</td>
</tr>
<tr>
<td>Nursing Fees</td>
<td>$770.00</td>
</tr>
<tr>
<td>Total</td>
<td>$1040.00</td>
</tr>
</tbody>
</table>

PROFESSIONAL LIABILITY INSURANCE (annual, non-refundable, due at registration, estimated at time of publication)*

Clinical athletic training students $75.00/semester

MUSIC CHARGES FOR NON-MUSIC MAJORS OR MINORS (LESSONS IN APPLIED MUSIC)

Fees, in addition to regular tuition, per credit per semester $300.00

READMISSION FEE

$100.00

INACTIVE STATUS FEE

$50.00/semester

NON-UM PROGRAM STATUS FEE

$50.00/semester

GRADUATE APPLICATION FEE

$65.00

LATE REGISTRATION FEE (Permission to register required)

<table>
<thead>
<tr>
<th>Date Range</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/22/2012 - 8/29/2012</td>
<td>$100.00</td>
</tr>
<tr>
<td>8/30/2012 - 9/6/2012</td>
<td>$200.00</td>
</tr>
<tr>
<td>9/7/2012 - forward</td>
<td>$300.00</td>
</tr>
</tbody>
</table>

REINSTATEMENT FEE

Reinstatement Fee charged if classes are canceled AFTER Semester begins $100.00

PROFICIENCY OR COMPETENCY EXAMINATION FEE

College of Engineering, Division of Continuing and International Education:

<table>
<thead>
<tr>
<th>Service</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examination Fee, per examination</td>
<td>$25.00</td>
</tr>
<tr>
<td>Recording Fee for Competency Examinations, per examination</td>
<td>$25.00</td>
</tr>
<tr>
<td>English Language Proficiency Test</td>
<td>$50.00</td>
</tr>
</tbody>
</table>
ALUMNI RATE and POLICY

Special Opportunity for UM Graduates

UM graduates may take undergraduate credit courses in the College of Arts and Sciences on a space available basis, at a special alumni rate. All University of Miami graduates are eligible for this special program.

Students may take whatever courses are of interest. From Anthropology to Theatre Arts and all the disciplines in between, participants may choose a course or collection of courses (maximum two courses per discipline) to meet professional or personal goals.

Interested students may call the Division of Continuing and International Education at 305-284-4000 to inquire about the benefit and/or the current tuition rate, request an application, or enroll in the courses. They will submit a simple, no-fee, one-page application, simply select an undergraduate course (open on a space available basis) and be on their way to continued learning at UM.

Policies Governing Enrollment in University of Miami Alumni Status

The University of Miami Alumni Status includes students who are not seeking a degree and meet the following requirements. Enrollment in a non-degree program and/or satisfactory completion of courses does not imply admission to a degree program.

a) University of Miami graduates (completed degree);
b) U.S. citizens or permanent U.S. residents.

I. Conditions applying to University of Miami Alumni enrollment

a) Students may enroll in a maximum of 12 undergraduate credits per semester.
b) Students are limited to two courses per academic department.*
c) Courses may be selected from the College of Arts and Sciences only.
d) International students will not be issued I-20 forms.
e) International students in B-1 (business) or B-2 (pleasure) visa status may engage in study as long as the educational activity is secondary to the principal activity for which the visa was sought.
f) Enrollment may be completed on a space-available basis only. (Course availability determined two days prior to semester start.)
g) Courses taken for undergraduate credit (including 500 level courses) will not be considered for graduate credit at a later date.

*Note: Not all courses and/or departments may be available.
ROOM RATES - UNDERGRADUATES

<table>
<thead>
<tr>
<th>Residential Colleges¹</th>
<th>Semester</th>
<th>Annual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double</td>
<td>$3,457.00</td>
<td>$6,914.00</td>
</tr>
<tr>
<td>Small Single²</td>
<td>$4,328.00</td>
<td>$8,656.00</td>
</tr>
<tr>
<td>Standard Single ³</td>
<td>$4,972.00</td>
<td>$9,944.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>University Village⁴</th>
<th>Fall Semester 2012 (Aug-Dec)</th>
<th>Spring Semester 2013 (Jan-May)</th>
<th>Summer Term 2013 (June-July)</th>
<th>Annual Rate (12-mos. agreement) in Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ibis Model (1:1)</td>
<td>$8,105.00</td>
<td>$8,105.00</td>
<td>$3,222.00</td>
<td>$19,432.00</td>
</tr>
<tr>
<td>Palm Model (2:2)</td>
<td>$5,668.00</td>
<td>$5,668.00</td>
<td>$2,247.00</td>
<td>$13,583.00</td>
</tr>
<tr>
<td>Cane Model (4:2)</td>
<td>$4,676.00</td>
<td>$4,676.00</td>
<td>$1,850.00</td>
<td>$11,202.00</td>
</tr>
<tr>
<td>Villager Model (4:4)</td>
<td>$5,054.00</td>
<td>$5,054.00</td>
<td>$2,001.00</td>
<td>$12,109.00</td>
</tr>
<tr>
<td>Lake Model (4:4)</td>
<td>$5,153.00</td>
<td>$5,153.00</td>
<td>$2,041.00</td>
<td>$12,347.00</td>
</tr>
</tbody>
</table>

1. Freshmen are typically assigned to Hecht and Stanford Residential Colleges but may be assigned to another residential college based on availability.

2. Small Singles are only available in Hecht and Stanford Residential Colleges and only to new freshmen.

3. Standard single rooms are available in Eaton, Mahoney, and Pearson Colleges and only to returning upper-class students.

4. For upper-class students only (60+ academic credits completed)—no freshmen or sophomores; annual (12-month) agreement for all Village residents—billed by semester/term through the Office of Student Account Services.

SUMMER SESSION (all air-conditioned) Rates are per person

<table>
<thead>
<tr>
<th></th>
<th>Rates are per person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Double Room</td>
<td>$900.00 per session</td>
</tr>
<tr>
<td>Small Single Room (when available)</td>
<td>$1,100.00 per session</td>
</tr>
<tr>
<td>Standard Single Room</td>
<td>$1,200.00 per session</td>
</tr>
</tbody>
</table>

GRADUATE HOUSING

Housing in on-campus housing is not available for GRADUATE students in addition to married students, single parents with children, law students, and medical students. The Department of Housing and Residential Life does assist GRADUATE students with off-campus housing information and resources at [http://www.miami.edu/housing](http://www.miami.edu/housing).

LAW HOUSING

Housing in on-campus housing is not available for LAW students in addition to married students, single parents with children, graduate students, and medical students. The Department of Housing and Residential Life does assist LAW students with off-campus housing information and resources at [http://www.miami.edu/housing](http://www.miami.edu/housing).
MEAL PLANS

The following are the Meal Plan rates for the 2012 - 2013 academic year. Meal Plan enrollment is for the full academic year but charged on a semester basis.

<table>
<thead>
<tr>
<th>Plan</th>
<th>Dining Dollars per Semester</th>
<th>Semester Cost</th>
<th>Annual Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 Meal Plan</td>
<td>$50</td>
<td>$2484</td>
<td>$4968</td>
</tr>
<tr>
<td>14 Meal Plan</td>
<td>$150</td>
<td>$2374</td>
<td>$4748</td>
</tr>
<tr>
<td>8 Kosher Plus Meal Plan</td>
<td>$200 plus $500 Oasis Dollars</td>
<td>$2287</td>
<td>$4574</td>
</tr>
<tr>
<td>8 Meal Plan</td>
<td>$200</td>
<td>$1782</td>
<td>$3564</td>
</tr>
<tr>
<td>5 Meal Plan</td>
<td>$100</td>
<td>$1092</td>
<td>$2184</td>
</tr>
</tbody>
</table>

University Village and Commuter students are eligible to participate in the 5 Meal Plan or the new Block Meal Plans. These plans offer greater flexibility, a better value and may be purchased at any time during the academic year. For more information, visit http://www.miami.edu/finance/index.php/auxiliary_services/dining_services.

<table>
<thead>
<tr>
<th>Plan</th>
<th>Semester Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 Block Meal Plan</td>
<td>$1,133</td>
</tr>
<tr>
<td>75 Block Meal Plan</td>
<td>$850</td>
</tr>
<tr>
<td>50 Block Meal Plan</td>
<td>$572</td>
</tr>
<tr>
<td>10 Block Refresh</td>
<td>$116</td>
</tr>
</tbody>
</table>
PARKING AND TRANSPORTATION SERVICES

<table>
<thead>
<tr>
<th>Description</th>
<th>Price (tax included)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commuter Student</td>
<td>$ 458.00</td>
</tr>
<tr>
<td>Fall Only - Commuter</td>
<td>$ 239.00</td>
</tr>
<tr>
<td>Resident Student</td>
<td>$ 492.00</td>
</tr>
<tr>
<td>Fall Only - Resident</td>
<td>$ 246.00</td>
</tr>
<tr>
<td>Discount</td>
<td>$ 234.00</td>
</tr>
<tr>
<td>Visitor</td>
<td>$ 516.00</td>
</tr>
<tr>
<td>Motorcycle</td>
<td>$ 90.00</td>
</tr>
</tbody>
</table>

*Parking subject to change

Parking on the University of Miami’s Coral Gables campus is a privilege extended to those using the facilities of the University consistent with the terms of the University’s Motor Vehicle Parking Code and other policies of the University as they are set or amended by the Provost. Parking privileges are extended only to those eligible members of the university community including trustees, faculty, administrators, staff, students, vendors and visitors who have paid for, received and properly displayed a current and valid UM parking permit. In consideration of being allowed to use the University’s facilities for parking, the purchaser of a parking permit agrees to be bound by the rules set forth in the Motor Vehicle Parking Code, and agrees to pay to the University any fine or administrative charge assessed for non-compliance with this code.

Students, faculty, employees, and staff may not park in visitor parking spaces, and UM parking permits are not valid at parking meters.

**First year resident students (students residing on the Coral Gables campus who are attending college on a full time basis for the first time) are restricted from purchasing a parking permit to park on the University of Miami’s Coral Gables campus. This policy applies to first year students living in University of Miami student housing on the Coral Gables campus.**

For more information on Parking, please visit our Website, [www.miami.edu/parking](http://www.miami.edu/parking). Annual permits are valid August 1, 2012 through August 15, 2013.
CAMNER ACADEMIC RESOURCE CENTER

Located on the second floor of the University Center, the Camner Academic Resource Center (ARC) offers free academic assistance to all UM students. The ARC offers individual peer tutoring by appointment in most subjects, study skills instruction with a Learning Specialist, free academic workshops, and many other valuable services. Please visit www.umarc.miami.edu or call 305-284-2800 to learn more or schedule an appointment.

Peer Tutoring

At the ARC, all UM students can take advantage of free individual peer tutoring to develop a deeper understanding of course work through additional, special, or corrective content instruction. All tutoring is course specific and taught by nationally certified peer tutors. All UM students are eligible for two hours of tutoring per week for each course. Peer tutoring is available for more than 175 courses.

Academic Workshops

This free workshop series instructs students on specific academic skills and strategies to enhance academic performance. Workshop topics include reducing test anxiety, effective test-taking strategies, improving study strategies, utilizing technology, and more. Topics are updated every semester, and students may attend unlimited sessions. Please visit our website www.umarc.miami.edu for the current workshop schedule.

Learning Specialists

The Academic Resource Center provides the support of trained Learning Specialists to students experiencing difficulty with academic issues. Students may request a one-on-one meeting with a Learning Specialist to help develop the skills needed to achieve success in their academic careers. Skills covered during these appointments include time management, effective note-taking, college textbook reading, educational technologies, test taking, and other learning strategies. Students can request an appointment with a Learning Specialist through our website or by filling out a request form at the Camner Academic Resource Center. Visit the website at www.umarc.miami.edu for more information about the support services available to students.

Independent Learning Initiative

The Independent Learning Initiative is a fee-based academic support program that provides structure, support, instruction, and monitoring for students needing additional guidance during the college experience. During the semester, students will identify and understand their academic strengths and areas for growth, as well as learn strategies, skills, and technologies to enhance their academic and personal success in college. Participants learn to monitor their academic progress and critically evaluate their current skills and strategies to work towards becoming a successful independent student. For more information about the program or to apply, please visit our website at www.umarc.miami.edu
Supplemental Instruction

Small group sessions are available to help students succeed in the University’s toughest courses. Group Peer Tutoring is done on a weekly basis where students sit down to discuss course content in a small group setting with the peer tutor serving as a facilitator.

UMX: University of Miami’s Freshman Experience

This one-credit elective course is taught by UM faculty, administrators, and advisors across different disciplines as a way of providing mentoring to incoming students. The objective is to help new students transition to college life while introducing them to the many services offered by the university and in the surrounding community. UMX provides a firsthand experience in utilizing UM resources necessary for success in college and beyond. Specifically, students will be exposed to campus leadership opportunities, academic and career planning, university traditions, study abroad opportunities, personal wellness programs, as well as advising and registration. All UMX course sections meet once a week.

Office of Disability Services (ODS)

The Office of Disability Services (ODS) is the primary university office responsible for the coordination of auxiliary aids and services for students with disabilities (Please also see information listed under the Camner Academic Resource Center (ARC).

Information is available to prospective and enrolled students, their parents and/or sponsors. The Office of Disability Services (ODS) is located in the Camner Academic Resource Center in Whitten University Center N201. ODS staff can be reached at 305-284-2374 (Voice) or 305-284-1999 (Fax). Office hours are 8:30 am to 5:00 pm, Monday through Friday. Individuals may email the office staff at disabilityservices@miami.edu for quick responses to questions.

The Americans with Disabilities Act defines an individual with a disability as a person who has a physical or mental impairment which substantially limits one or more of the person’s major life activities:

a) has a physical or mental impairment which substantially limits one or more of the person’s major life activities,

b) has a record of such an impairment or

c) is regarded as having such impairment.

Students requesting services must submit current documentation to the Office of Disability Services, a written request for services, and be part of the collaborative process by participating in an intake meeting. The Office of Disability Services requires that documentation be current (within 3 years) and describe the nature of the disability, include a diagnosis by professionals in the field, outline the history of the disability and the treatment. Documentation should include a description of how the disability relates to the need for services. Auxiliary aids and services are provided on an individual basis, and may include, but are not limited to: letters to instructors
outlining accommodation needs, note takers, testing accommodations and assistance with accessibility issues. Students should submit documentation 4-6 weeks prior to the start of classes to ensure time for the coordination of services. Academic accommodations are not applied retroactively and may only be provided to students officially registered with the Office of Disability Services. Confidentiality of records is maintained by the Office of Disability Services. Students seeking services should contact the Office of Disability Services to discuss individual needs and obtain documentation guidelines specific to their disability.

The Office of Disability Services also reviews documentation for University housing accommodations. Students are required to complete all the necessary applications, pay all deposits, and meet all deadlines set forth by University Housing. Students must then submit documentation to the Office of Disability Services along with a written request for housing accommodations. Students are encouraged to submit requests early or prior to regular housing registration. Requests received after housing assignments have been published may not be considered until the following semester due to availability.

Documentation will only be reviewed once it is complete. Students are then asked to complete the collaborative process with an intake meeting. Once ODS has complete documentation and has met with the student, the student will be notified in writing of the decision. Documentation guidelines may be obtained by contacting the office or visiting our website.

Services of a personal nature (for example, readers for personal use or assistance in eating or dressing) are not provided through ODS. However, ODS counselors may make referrals, where possible, to other offices or agencies that may assist in providing nonacademic or personal services.

**ODS Internal Appeals Procedure:**

The University of Miami, through the Office of Disability Services, has adopted a grievance procedure providing for prompt resolution of complaints by persons who believe they have been subjected to discrimination based upon their disability.

All complaints must be addressed to the University of Miami, The Office of Disability Services, P.O. Box 249003, Coral Gables, Florida, 33124 or emailed to disabilityservices@miami.edu to the attention of the director.

1. All complaints must be directed to the University of Miami, Office of Disability Services, P.O. Box 249003, Coral Gables, Florida. 33124 and addressed to the Director of the Camner Academic Resource Center.
2. All complaints must be in writing and must contain the name and address of the Complainant. In the grievance, the student or individual must set forth specific facts in support of his/her complaint. All grievances must be signed by the student or individual.
3. All grievances must be filed within 90 days of the alleged discriminatory event. If the complaint involves the denial of a student's request for auxiliary aids and services or other modifications, the grievance must be filed within ten (10) days after the student receives notification that their request for auxiliary aids and services or other modifications has been denied.

4. The grievance will be reviewed and adjudicated by the Director of the Camner Academic Resource Center, or her designee (the "Director"). In no event, will the designee be the same individual who made the initial determination as to the request for auxiliary aids, services, or other modifications or accommodations.

5. An investigation, if deemed appropriate by the Director, will be conducted by the Director following receipt of the grievance. The Director may review information and documentation contained in a student's file and/or any other information an individual may submit in support of his/her grievance.

6. Within twenty (20) days of the receipt of the grievance, the grieving party will receive a written decision from the Director.

7. The decision of the Director of the Camner Academic Resource Center shall be considered the final decision on the matter.

Retaliation against a person who files a grievance, or opposes a policy he/she believes to be discriminatory is prohibited.

Persons may contact the Assistant Director of Disability Services, who is responsible for coordinating the University of Miami's 504 compliance efforts at (305) 284-2374 (P.O. Box 249003, Coral Gables, Florida, 33124), with any questions or concerns.

Individuals, who believe that they were subjected to discrimination on the basis of disability by the University of Miami, are encouraged to use the grievance procedure to resolve their concerns. Individuals may, however, wish to file a complaint directly with the U.S. Department of Education, Office for Civil Rights, 61 Forsyth Street, Suite 19T70, Atlanta, Georgia, 30303, (404) 562-6350.
CANE CARDS

The Cane Card is an on-campus student identification card. Students, faculty, and staff must present a government issued photo ID such as a driver’s license or passport when acquiring their card. The Cane Card provides access to on-campus student residences, the Otto G. Richter Library, computer laboratories, the swimming pool, the Patti and Allan Herbert Wellness Center (for those who purchase a membership), and other facilities where access has been granted. The Cane Card is also used to control lending privileges at the library, access to athletic and other events (fee required), the purchase of discounted Metrorail tickets, U-Print services, and meal plan privileges. All University of Miami students, faculty and, staff are required to carry their Cane Cards for identification purposes while on campus.

- Lost or stolen Cane Cards should be reported to the Cane Card office at 305-284-3096 during the week or anytime by accessing your MyUM account, under the financial tab.

- Lost or stolen cards may also be reported to security 24 hours per day at 305-284-6666.

- After being reported stolen or lost, a card will be deactivated to prevent unauthorized use.

- Lost or stolen cards will be replaced for a $20 fee (fee waived upon proof of police report).

- Damaged cards will be replaced for free upon exchange of the original damaged card.

- For all issues with Cane Express accounts, call Student Services at 305-284-6430.
THE DEPARTMENT OF COMMUTER STUDENT INVOLVEMENT

The Department of Commuter Student Involvement (CSI) is located on the second floor of the University Center, Room 236. This department offers a variety of services and programs for students from Miami-Dade and Broward Counties that live at home and commute to the University of Miami. For more information, please visit our site at www.miami.edu/csi.

Great Start Pre-Orientation Program for First-Year Commuter Students

Great Start is an overnight, pre-orientation program designed to promote and emphasize college adjustment and campus involvement opportunities. The program's goal is to help you feel like a part of the University and give you a chance to meet other commuter students. Students who participated in Great Start have said the program greatly contributed to a positive transition from high school to college. Commuter student leaders are needed to serve as Program Coordinators, Steering Committee members, and Counselors. Applications are available in the fall on the Great Start website, http://www.miami.edu/greatstart.

Commuter Assistant/Transfer Assistant Program

The Commuter Assistant (CA)/Transfer Assistant (TA) Program provides first-year commuter and incoming transfer students with an experience that mirrors the programs and services offered by Resident Assistants and Academic Fellows to first-year students living on-campus in a Residential College. All first-year commuter students and interested new transfer students will be assigned to a CA or TA group and will begin meeting with this group during New Student Orientation. The CA/TA serves as a mentor, plans programs that will aid commuter or transfer students in their transition to college, and works with the Department of Orientation and Commuter Student Involvement to plan, promote, and implement initiatives specifically focused on first-year commuter or incoming transfer students. CAs and TAs are hired in the spring semester. Applications are available on the CSI website, www.miami.edu/csi.

Association of Commuter Students

The Association of Commuter Students (ACS) is a second home for its members; a place to bond with fellow students and to participate in all that the University of Miami has to offer. ACS provides its members with a working knowledge of UM that gives them the opportunity to become fully involved in campus life. Brought together by a simple fact of life, commuting to school, ACS members have forged bonds that extend beyond this common circumstance. If you would like further information on joining this very active student group, please visit their website at http://www.miami.edu/studorgs/acs/.
OFF-CAMPUS HOUSING ASSISTANCE
www.miami.edu/housing

The Department of Housing and Residential Life provides assistance to students, staff, and faculty with identifying off-campus housing options. A web-based search engine of community listings and information about off-campus apartment complex listings is available along with other resources such as:

- Individual consultations & appointments
- Over-the-phone guidance
- Knowledge of the greater Miami area & specific neighborhoods where students typically reside
- Roommate search assistance

For more information about assistance with off-campus housing, please see the Department of Housing and Residential Life web page at www.miami.edu/housing. Their office telephone number is (305) 284-4505 and their e-mail address is housing@miami.edu.
COUNSELING CENTER

www.miami.edu/counseling-center

A college experience should be both productive and enjoyable; however, at times it can be stressful and overwhelming.

The Student Counseling Center has personal counselors who can help students effectively cope with the challenges of college life and facilitate learning, growing and socializing. The Counseling Center offers a wide range of services, including short-term individual counseling, career and educational counseling, outreach programs, and various groups aimed at enhancing personal growth and development. The Center is staffed by an experienced team of professionals from the fields of psychology, psychiatry, mental health counseling and social work.

Fall and Spring semesters regular appointments are available Monday, Wednesday and Friday from 9 a.m. to 5 p.m. and Tuesdays and Thursdays from 9 a.m. to 7 p.m. Students can call the Counseling Center directly at (305)284-5511 or request appointments in person. Generally, students can be seen the same day for a crisis appointment. The University Counseling Center is located in Building 21-R of the Center for Student Services. If a crisis occurs when the Center is closed, counselors can be reached by calling the University of Miami Police department at (305) 284-6666.

SEXUAL ASSAULT RESPONSE TEAM (S.A.R.T.)

The Counseling Center also coordinates the Sexual Assault Response Team (S.A.R.T.). The number is 305-798-6666.

STUDENT TRAINING

The Counseling Center participates in the graduate training programs in the Department of Psychology and the programs of the Department of Educational and Psychological Studies. Doctoral students in psychology take part in the Center’s professional activities and have first-hand contact with clinical problems. In addition, interns obtain professional training at the Counseling Center through the Dr. Jess Spirer Predoctoral Internship in Professional Psychology.
The Dean of Students Office houses several units that provide co-curricular services. Through the Honor Council, the Office advises and directs the efforts of students, faculty and administrators in academic integrity-related concerns. The administration and record keeping of all undergraduate student disciplinary infractions are also the responsibility of the Dean of Students Office.

The Center for Alcohol and Other Drug Education and the University Chaplains Association both provide opportunities for involvement, leadership, and personal exploration. The Office of Fraternity & Sorority Life coordinates and advises the efforts of the Association of Greek Letter Organizations, the National Pan-Hellenic Council, Inc., the Interfraternity Council, the Multiethnic Greek Council, and the Panhellenic Association. Rho Lambda National Leadership Recognition Society for Sorority Women, Order of Omega Greek Leadership Honor Society, Gamma Sigma Alpha National Academic Greek Honor Society, Alpha Lambda Delta Freshmen Honor Society, BACCHUS and GAMMA are advised by various Deans within the Office.

Veteran Student Services is the newest addition to the Office and serves as a centralized campus resource for UM’s veteran student population.

The Dean of Students Office coordinates efforts in response to various student crises. Along with the Deans, the staff includes a Licensed Clinical Social Worker. The entire staff is knowledgeable and prepared to assist all students in their adjustments to campus life.

The Dean of Students Office is located in Building 21 (Center for Student Services), Suite H, (305) 284-5353.
GENERAL CAREER SERVICES

TOPPEL CAREER CENTER
www.HireACane.com

The Toppel Career Center, located in the Whitten University Center, assists undergraduate students, graduate students and alumni in formulating their career plans and in pursuing graduate/professional school as well as full-time and internship opportunities.

It is the intent and desire of the University of Miami and the Toppel Career Center to provide equal employment opportunities for students and graduates regardless of race, color, national origin, religion, gender, sexual orientation, age or disabilities.

INDIVIDUAL CAREER ADVICING with professional career advisors is available to assist students with career questions, issues and concerns. Students are encouraged to meet with a professional staff member to discuss career goals and to obtain assistance in developing a career action plan (please call to make an appointment).

WALK-IN ADVISING is a service provided to students and alumni who need assistance with developing their resume, cover letter, and/or personal statement. No appointment is necessary for Walk-In Advising - simply stop by Toppel Monday through Thursday, 10am - 4:30pm. Walk-in advising is also available for quick internship questions on Mondays, 2:00-4:00 pm and Thursdays, 10:00 am to 12:00 pm.

A series of WORKSHOPS is offered throughout the academic year. Each session provides information and skill-building activities in the areas of resume development, interviewing skills, networking, securing internships, and much more. In addition, programs designed to increase awareness of specific career paths and professional opportunities are offered. These are conducted by outside speakers and panelists who are recognized specialists in their field.

THE TOPPEL INTERNSHIP PROGRAM (TIP) is designed to provide valuable career-related work experience through internships with participating employers. Students can search HireACane for hundreds of opportunities available to them. It is recommended that students complete at least two internships while in school. Students may take on an internship position beginning the second semester of their freshman year.

The TIP Program allows students who have already secured an internship a zero-credit transcript notation from the Toppel Career Center. The University of Miami Internship (UMI) course is offered fall, spring, and summer, and will allow you to have work experience related to your major, career path, or possible career path/interest and it will provide recognition of the internship experience on your official transcript. Part-time internships require at least 160 working hours while full-time internships require at least 320 working hours.

ON CAMPUS RECRUITING (OCR): Representatives from local, national and international businesses and industries, governmental agencies, non-profit organizations, military services, human services, and school systems visit the campus to meet with students and to interview and discuss career opportunities with
students. After applying to openings via HireACane, students may be scheduled for individual interviews with visiting employer representatives.

**INFORMATION SESSIONS:** Many employers also visit campus to host information sessions about their company or organization where students have the opportunity to learn more about the career tracks and corporate culture of the company.

**CAREER EXPOS AND EVENTS** are open to all students and alumni and range from general events to major-specific fairs. CAREER EXPO is held twice a year, and is inclusive of all industries and majors. Special CAREER FAIRS are held for interested students in Accounting, Architecture, Education, Nursing and Health Care, and Non-profit/Government. Students can also participate in virtual career fairs. Regardless of the focus, these EXPOS and FAIRS are intended to provide students and alumni with an opportunity to network with recruiters from a wide variety of industries.

**ONLINE CAREER RESOURCES**

**HireACane:** A career management system where students can access internships, jobs, on-campus recruiting information, career programs, and companies/organizations attending Careers Expos and Fairs. Students can only access these additional online resources by activating and logging into their HireACane account.

**TypeFocus:** Learn about your personality and explore potential career paths by using this career assessment.

**CareerShift:** Designed to assist students in searching employer websites and job boards, and to retrieve key personnel contact information.

**GoingGlobal:** Search postings for internships and jobs abroad, view country profiles, and research information on resumes and interviews.

**The Career Insider, Powered by Vault:** Access an extensive online career library to obtain industry, career, and employer information.

**UCAN (University Career Action Network):** Connects employers with talented undergraduate and graduate students who are seeking diverse career building experiences through internships. The UCAN Internship Exchange is shared among 22 of the most prestigious and elite universities in the United States:

**CAREER LIBRARY RESOURCES:** The Toppel Career Center has established a comprehensive and current career resource and research facility, which contains career-related materials for use by University students and alumni in areas such as, salary surveys and detailed information about specific careers and the preparation necessary to attain them. Resource areas include:

- Magazines
- Career Resource Books
- Internship Resources
THE CAREER TECHNOLOGY LAB enables students to work on their job and internship search. HireACane, our online Career Management System, allows students to create a career profile, upload resumes, search for jobs and internships, and sign up for on-campus interviews. In order to gain further insight about their career and personal preferences students and alumni can utilize TypeFocus and The Strong Test, which are computerized career self-assessment tests; these are excellent tools for personal career development and decision-making.

The Launch Pad at Toppel is a career guidance component of the Toppel Career Center, providing resources to entrepreneurs and inventors at the University of Miami. They provide weekly information sessions and networking events, one-on-one facilitation to help students and alumni launch their ventures or help their companies grow, a venture coaching program, and an opportunity to join the Launch Pad Network, which will help you network with fellow entrepreneurs and inventors.
THE HONOR COUNCIL – UNDERGRADUATE
www.miami.edu/honor-council

The Honor Council is a standing committee of 29 undergraduate student representatives who are responsible for educating the University community on Honor Code related issues. The members promote academic integrity through a variety of educational programs and also investigate and adjudicate alleged violations of the Undergraduate Student Honor Code.

The purpose of the Honor Code is to protect the academic integrity of the University by encouraging consistent ethical behavior in assigned course work by students. Members of the University community who would like to request Honor Council programming or investigation of alleged academic dishonesty are encouraged to call the Secretary of the Honor Council at (305) 284-5354.
International Student and Scholar Services (ISSS)

5600 Merrick Drive, Building 21-F
Coral Gables, FL 33124-5550
Telephone: 305.284.2928
Fax: 305.284.3409
Email: isss@miami.edu
Website: www.miami.edu/internationalservices

ISSS represents the needs and interests of the University of Miami international community and provides support services and programs for international students, scholars, observers and academic departments at UM. Every year, approximately 3400 international students (undergraduate and graduate), scholars (professors and researchers), and observers from more than 115 countries representing every region of the world study, teach, conduct research and observe at the University of Miami.

International students and scholars face some unique challenges as well as opportunities while pursuing their academic goals at UM. The professional and dedicated ISSS staff provides expert advice, services, programs, and information aimed at supporting their educational endeavors and enriching their U.S. experience over the entire course of their stay. ISSS support services and programs encompass:

- Pre-Arrival Information
- Immigration Advising for Students and Scholars in F-1 and J-1 Status
- Employment Information and Authorization
- GLACIER Complete International Tax Preparation Software
- Liaison with Sponsoring Embassies, Government and Agencies
- Short-Term, Small Emergency Loans
- Assistance with Personal and Adjustment Problems
- Assistance in Coping with Crises
- Advocacy
- International Student Orientation
- International Scholar Orientation
- International Spouses Club (ISC)
- Thanksgiving Day Matchup Program
- Support for the Council of International Students and Organizations (COISO)

On the ISSS website you will find detailed information regarding each of these services and programs. Please do not hesitate to contact us should you have any questions or require additional information. We look forward to assisting you.
LIBRARIES

The University of Miami Libraries provide support and services for students, faculty and staff.

Please visit http://www.library.miami.edu/about/libraries/libraries_collections.html for detailed information.
Ombudsperson and University Troubleshooters Program

www.miami.edu/ombudsperson

The Ombudsperson acts as an independent representative of the University to listen to student grievances and complaints. The Ombudsperson listens to the concern, investigates the facts and attempts to resolve situations in the best possible way. The Ombudsperson neither makes University policy nor overrides it. However, because of extensive knowledge of the University, the Ombudsperson is in a position to interpret University policy to students and make recommendations to the central administration when policy changes are needed. The Ombudsperson expedites the decision-making process within the University and ensures that the University follows its own published policies and procedures.

The Ombudsperson and University Troubleshooters Program was not established to bypass or circumvent those individuals who have responsibility for departments or classroom instruction. Nor is the Program designed to eliminate certain structured grievance and appellate mechanisms already established by the University. Each academic department and each administrative unit has established a contact person, known as a University Troubleshooter, to assist students with academic and administrative related matters. These University Troubleshooters are faculty members and administrators who serve as a resource for students seeking assistance.

When regular channels have not brought resolution to your problem and after you have spoken to the appropriate University Troubleshooter, you should contact the Office of the Ombudsperson. The Ombudsperson seeks to resolve matters informally before they become matters in a formal grievance-appeal proceeding and assists students in reestablishing communication with the person or persons with whom a complaint may have been filed.

To access the University of Miami Ombudsperson and University Troubleshooters program, contact the Office of the Vice President for Student Affairs, Ashe Administration Building Room 244, or 305-284-4922. For more information, visit www.miami.edu/ombudsperson. Concerns may be submitted through an online form located on that website.
The University of Miami offers undergraduate on-campus housing in five residential colleges and University Village, which is comprised of seven buildings and two parking garages.

Each residential college has resident faculty members (Masters and Associate Masters), a student affairs professional staff member (Area Director / Assistant Area Director) and student staff who live in the residential college with the resident students to support and promote student well-being, safety, academic achievement, student learning, and development. In addition, numerous social, educational, cultural, and recreational programs are offered throughout the academic year.

Special Interest Housing (SIH) is also available within the residential college system—these floor communities are facilitated through the Office of Academic Enhancement and center around themes related to music technologies, diversity, world cultures, healthier lifestyles, and diverse educational experiences as well as environmental awareness.

General Highlights

- The University has both single and double rooms. Singles are assigned based on seniority living on campus and, thus, entering students are typically assigned to double occupancy rooms. Effort is taken to assign roommates of similar age, class standing, and smoking preference.
- All non-local freshmen students are required to live in University housing for two academic semesters, as long as space is available. This policy does not apply to freshmen students living with parents or legal guardians in Miami-Dade or Broward Counties.
- University Village, which is an apartment-style residential community with 12-month agreements, is an available option to juniors and seniors. The apartments are fully furnished and include in-apartment washers and dryers, full-size kitchen appliances (stove, refrigerator, microwave, & dishwasher), and free reserved parking. For general information on University Village, go on the web to http://www.miami.edu/housing.
- All housing facilities are co-educational with men and women living on alternate floors or alternating separate suites or apartments.
- All residential college rooms and apartment bedrooms are air-conditioned and equipped with a bed, dresser, desk, chair, and window coverings. A 140+-channel cable television system with many HD & digital channels and local telephone service is also provided. Each residential college room and University Village bedroom is wired for internet access.
Admitted undergraduate students, following verification of acceptance to the University and payment of the enrollment deposit, can apply for housing on-line in myUM. myUM is the University’s web-based, interactive information hub.

- Students are encouraged to apply for housing as soon as possible after paying the enrollment deposit. New freshmen housing applications should be submitted by May 1, 2012; applications received from new freshmen after May 1, 2012 will be accommodated on a space available basis.

- The $250 non-refundable deposit can be paid by credit card or electronic debit from a checking account at the time of application.

- Assignments to buildings, rooms, and specific roommates are made according to the date of application and receipt of the housing deposit.

- Whenever possible, requests for specific buildings, rooms, and roommates are honored. However, if specific preferences are not available, the University reserves the right to assign students to other locations and roommates.

The 2012-2013 housing agreement is for both fall and spring semesters (12-month annual agreement for University Village), unless the applicant is:

1. applying only for spring semester housing (not available in University Village)
2. applying only for summer session housing
3. graduating in December (and May as well for University Village)
4. participating in a University of Miami study abroad experience spring semester (or summer for University Village)
5. not enrolling in the University spring semester (or for subsequent fall semester in University Village)

Housing cancellations received through May 31, 2012 will result in the forfeiture of the $250 housing deposit. Cancellations received after May 31, 2012 will result in:

- the forfeiture of the $250 housing deposit; plus
- the canceling student remaining responsible for the fall semester housing charges, unless or until the vacancy created by the cancellation can be filled by another qualifying University student applying for housing

Housing cancellations for the spring semester received through December 1, 2012 will result in the forfeiture of the $250 housing deposit. Cancellations for the spring semester received after December 1, 2012 will result in:

- the forfeiture of the $250 housing deposit; plus
- the canceling student remaining responsible for the spring semester housing charges, unless or until the vacancy created by the cancellation can be filled by another qualifying University student applying for housing

*Note: Written notice of cancellations must be made to the Department of Housing and Residential Life office directly.
The dates of housing availability are:

- **Fall Semester**    August 15, 2012 - December 14, 2012
- **Spring Semester**  January 9, 2013 - May 11, 2013

The Department of Housing and Residential Life also provides assistance to students, staff, and faculty with identifying off-campus housing options. A web-based search engine of community listings and information about off-campus apartment complex listings is available along with other resources such as:

- Individual consultations and appointments
- Over-the-phone guidance
- Knowledge of the greater Miami area & specific neighborhoods where students typically reside
- Roommate search assistance

For more information about housing on campus or assistance with off-campus housing, please see the Department of Housing and Residential Life web page at [www.miami.edu/housing](http://www.miami.edu/housing). Their office telephone number is (305) 284-4505 and their e-mail address is housing@miami.edu.
STUDENT HEALTH SERVICE

The Student Health Service provides primary care, specialty care and pharmacy services to eligible University of Miami students. You are not required to have the Health Center sponsored insurance plan to utilize our services. Appointments can be scheduled at mystudenthealth.miami.edu, services are also available on a “drop in” basis.

The Student Health Service is located at 5513 Merrick Drive, Coral Gables, Florida 33146, (across from the Pavia Garage).

Contact numbers are:
Telephone: (305) 284-9100/Fax: (305) 284-4098

Hours of operation:
Fall and Spring semesters: 8:30 a.m. to 5:00 p.m., Mondays, Tuesdays, Wednesdays and Fridays. On Thursdays: 9:00 a.m. to 5:00 p.m. Sundays: 11:00 a.m. until 4:00pm
Winter break, Spring break, and Summer sessions: Monday through Friday from 9:00 a.m. to 5:00 p.m.

The Health Service is closed on Saturdays and University holidays. After hours assistance is available by calling (305) 284-9100.

For sudden, severe illness or serious accident dial 911. For illnesses or injuries requiring immediate attention, students are urged to go to an Emergency Room. After hours assistance for urgent situations can be obtained by dialing (305) 284-9100. Students with United Healthcare insurance may also contact the United Healthcare Nurseline by calling (800) 436-7709 and selecting the Health Resources option. For less urgent conditions, you may visit one of the local Urgent Care Centers.

ELIGIBILITY/ACCESS

The Health & Counseling Centers Fee, is mandatory for all students first enrolled in Fall 2010 (undergraduate, graduate, and law) regardless of credit load, as well as all International students and students registered in an off-campus program but enrolled in the University sponsored student insurance plan.

The Health & Counseling Centers Fee is optional for continuing undergraduate, domestic graduate students enrolled in less than 9 credits or domestic law students enrolled in less than 12 credit hours. Graduate students enrolled in a 700 credit course are considered full time and, therefore, must pay the Health & Counseling Centers Fee.

HEALTH INSURANCE

Domestic students enrolled in six or more credit hours per semester (or considered full time) are required to obtain adequate health insurance (see exceptions). The annual premium for the health insurance plan offered through the Student Health Service is added to each student's fees. Domestic students with adequate alternative coverage may request cancellation of the insurance fee via myUM. Insurance cancellation must be renewed each year via myUM.
Deadlines to waive the insurance are:
July 25 for the Fall semester,
January 25 for the Spring semester,
April 25 for Summer I,
June 25 for Summer II.

Domestic students can check the status of their insurance waiver/cancellation request via myUM. The insurance premium will be prorated for those students entering for the first time in the Spring or Summer semesters. No waiver and/or refund will be granted after the above dates.

Students who have previously waived the insurance charge can reinstate the insurance prior to the Spring semester or first Summer session by completing the reinstatement request form and checklist. Coverage can also be reinitiated at the start of the Fall semester by choosing not to re-waive the charge, or at other times during the academic year, if within 30 days of termination of other similar coverage, by completing the reinstatement request form and checklist. Documentation of termination may be requested.

Deadline for reinstatement of insurance is January 25th for the Spring. Please do not consider your reinstatement complete until reinstatement has been verified via myUM, the charge has been posted to your student account and all charges on your account have been paid.

All international students are required to enroll in the University sponsored health insurance program. The annual premium for this coverage is added to each student's fees.

Any additional questions regarding the health insurance requirement should be directed to the Student Health Service at 305-284-9100 or to studenthealth@miami.edu.

IMMUNIZATION

All students are required to provide proof of immunization against measles, mumps and rubella; and tetanus, diphtheria and pertussis. All new students must also provide proof of immunization against hepatitis B and meningococcal meningitis or sign a waiver declining these immunizations. An immunization form must be completed and returned to the Student Health Service prior to arrival on campus. For students less than 18 years old, the meningitis/hepatitis vaccine waivers must be signed by a parent or legal guardian.

All international students must also be screened for tuberculosis by completing page two of the immunization form.

Deadlines for submission of immunization records are Fall - August 22nd, Spring - January 15th, Summer - April 15th. Failure to comply with this requirement will interfere with registration. A $50.00 processing fee will be charged for any form received after the start of the semester. Immunization information must be entered at mystudenthealth.miami.edu prior to faxing or mailing the form to the Student Health Service for verification. Immunization compliance can also be verified at mystudenthealth.miami.edu. Instructions on the use of mystudenthealth.miami.edu is available at www.miami.edu/student-health.
Most students will be able to obtain the required immunization information from their prior medical providers or from their prior high school, college or university. Students who believe that they were previously immunized but are unable to provide proof of immunization may either obtain blood tests confirming immunity or obtain the necessary immunizations. Immunizations and blood tests documenting immunity are available at the Student Health Service. All charges are in addition to processing fees for late forms.

Immunization against varicella (chicken pox) is suggested and is available at the Student Health Service for a reasonable charge.

**PHARMACY**

The pharmacy is located on the second floor of the Student Health Service, and can fill prescriptions from most local and out of town medical providers.

Prescription prices are often lower than at local drug stores, and most insurance plans are accepted. For students with the Student Health Service sponsored United Healthcare insurance plan, low cost generic medications are available at the Student Health Service Pharmacy. Non-prescription medications, vitamins, nutritional supplements, personal care products, over-the-counter medications, and condoms are also available. New prescriptions can be dropped off or called or faxed by the ordering provider. Refill requests will be handled most promptly by having your prescription number available and calling the automated refill line at (305) 284-5922. Refills can also be requested by calling (305) 284-5922 option 2.

- Students, spouses, and dependents may have their prescriptions filled at the Health Service pharmacy.
- Students with the Health Service sponsored insurance plan receive enhanced benefits if prescriptions are filled at the Health Service pharmacy.

Pharmacy telephone: (305) 284-5922; fax: (305) 284-4883.

Hours of operation:
Fall and Spring semesters are from 9:00 a.m. to 5:30 p.m., Monday through Friday.
Winter break, Spring break, and Summer sessions, 9:00 a.m. to 5:00 p.m. Monday through Friday.

The pharmacy is closed on Saturdays, Sundays, and on University holidays.
UNIVERSITY DINING SERVICES

The University of Miami Dining Services program offers students a variety of food options conveniently located throughout the campus. Among these are the:

Hurricane Food Court - featuring varied concepts including several well-known national brands

- Courtside Eatery at the Wellness Center - featuring a variety of healthy food options
- Jenkins Snack Bar – the perfect spot to grab a quick bite at the School of Business
- The Oasis – specializing in kosher deli products
- C-Store – a full service convenience store
- Starbucks at Richter Library – your favorite specialty coffee
- Carts – for your convenience around campus [Communication, Memorial, and Merrick]
- Village Marketplace – providing UV residents your convenience store needs
- Subway – enjoy a delicious sub at the Law School
- Sebastian’s Café – offers specialty sandwiches and salads at UM’s Newman Alumni Center
- GOT Spot featuring Rose’s Café – our newest addition located at the University’s Gables One Tower

The University of Miami Dining Services program offers a variety of services that meet the individual student’s schedule of classes and extracurricular activities. Five different meal plan options are offered at the Hecht/Stanford and Mahoney/Pearson Dining locations:

- 20-meal plan provides 20 meals per week
- 14-meal plan provides 14 meals per week
- 8-Kosher Plus meal plan provides 8 meals per week
- 8-meal plan provides 8 meals per week
- 5-meal plan provides 5 meals per week
- 100 Block meal plan provides 100 meals to be consumed throughout the fall and spring semesters
- 75 Block meal plan provides 75 meals to be consumed throughout the fall and spring semesters
- 50 Block meal plan provides 50 meals to be consumed throughout the fall and spring semesters

- Enrollment in any of the residential colleges (excluding University Village) requires participation in the 8, 8-Kosher Plus, 14, or 20 meal plans.
- Freshmen must choose from the 20, 14, or 8-Kosher Plus Meal Plans only.
- The 5-meal plan and block meal plans are open to Commuter and University Village students only.
- Graduate and undergraduate students who are 25 or older as of September 1 of the meal plan contract year are excluded from this requirement.
- Commuter and other students not enrolled in the residential colleges may participate in any meal plan.
- All meal plans are available seven days a week. Students have the opportunity to eat meals five times a day up to their weekly meal total.
Dining Dollars

- Dining Dollars provided with the meal plan may be used in approved food service locations for food purchases only. Usage is limited to $20 per day.
- Dining Dollars may not be used in vending machines.
- Unused Dining Dollars at the end of the Fall Semester will carry into the Spring Semester.
- Unused Dining Dollars at the end of the Spring Semester are forfeited.
- Dining Dollars may be used at the Hurricane Food Court, Carts, The Oasis, Convenience Store, Village Marketplace, Rathskeller, Subway, Jenkins Snack Bar, Starbucks, BankUnited Center, Sebastian’s Cafe and Courtside Eatery at the Wellness Center.

Dining Services Contract

- The Dining Services contract begins with the first meal of Fall Semester and extends through the last meal of Spring Semester.
- The student indicates choice of meal program on the Dining Contract or via myUM.
- The student’s signature on the Dining Contract or election via myUM signifies acceptance of that board plan for the period indicated.
- Students who do not enroll in any of the meal plans will be force enrolled onto the 14 meal plan. All terms and conditions will be binding upon the student.
- Meals are not served when the University is not in session, during official University vacation periods, or between semesters.
- The entire semester amount must be paid in full at the same time students pay other registration costs (tuition and fees) during or before the first week of classes.
- All students may make changes to their meal plan within the first week of the semester by notifying the Department of Dining Services or via myUM.
- Changes made to meal plans for the Spring Semester will be assessed a $40 processing fee.
- Charges will be prorated up to the end of the week.
- Meal plan weeks run Monday through Sunday.
- Releases will be subject to a $300 cancellation fee plus full charges through the week of cancellation, and may also result in a Dining Dollars surcharge fee.
- Approval is obtained solely through the Department of Dining Services.
- The University reserves the right to terminate the contract by written notice if a student fails to comply with any of the terms and conditions of the contract and all other University and Dining Services rules and regulations.

For more information on Dining Services write to University of Miami, Dining Services, P.O. Box 248106, Coral Gables, FL 33124-6909, call Dining Services at 305-284-3584, email diningservices@miami.edu or visit www.miami.edu/dining-services.
HONORS PROGRAMS

In 1957 the faculty of the University of Miami established the General Honors Program to provide an academically challenging course of study for outstanding students. The program was later expanded by the addition of departmental honors. Students who satisfactorily complete the requirements for general and/or departmental honors are graduated with General Honors and/or Departmental Honors; the award is noted on the graduates diploma and official transcript.

GENERAL HONORS PROGRAM

Over the past four decades since its foundation, the General Honors Program has grown. The program coordinates courses and sections each semester at the introductory through advanced levels, in a wide variety of fields in all colleges and schools of the University. In general, Honors courses are small classes taught as seminars with emphasis on interactive learning and discussion.

ADMISSION TO GENERAL HONORS

The University of Miami Honors Programs takes the initiative to invite the top 10% of the entering freshman class to join the General Honors Program. On receipt of an invitation, there is no further action required on the part of the student.

RETENTION AND REQUIREMENTS FOR GRADUATION WITH GENERAL HONORS

To remain in the General Honors Program a student must maintain an overall academic average of 3.500 and complete at least two Honors courses (six credits) per academic year.

To graduate with General Honors, a student must satisfy at least 24 credits in General Honors courses with a grade of “B” or better and have an overall grade point average of 3.500. Twelve of the 24 credits must be in courses at the 200 level or above. No more than 12 credits in the student’s major may be counted toward the 24 credits in General Honors.

WITHDRAWAL, DISMISSAL, AND REINSTATEMENT TO GENERAL HONORS

Students may withdraw from the program at any time at their discretion. They should notify the Honors Office in writing of their intention to withdraw. Honors students grade point averages and general performance are reviewed each academic year. Any student who fails to maintain the required cumulative grade point average or fails to take the required number of Honors credits will be excused from the program. Students may re-enter the program when their grade point average reaches 3.500; however, students must inform the Honors Office of the improved average and of their interest in re-entering the program.
DEPARTMENTAL HONORS PROGRAM

Among the departments offering approved programs for honors study at the junior-senior level for both majors and elective students are American studies, art and art history, biochemistry and molecular biology, biology, business administration, chemistry, computer science, engineering, English, finance, French, German, history, international finance and marketing, international studies, Judaic Studies, marine science, mathematics, meteorology, microbiology and immunology, philosophy, political science, psychology, religious studies, sociology, Spanish, and women’s and gender studies. Admission into the program is by invitation, but any student who believes himself or herself qualified may apply to the Chairman or the Departmental Honors Advisor of the major department, preferably during the sophomore or early junior year. Upon successful completion of the required program and with approval by the faculty of the department, the notation Departmental Honors in ... is included in the candidate’s diploma and transcript.

Departmental Honors Programs are designed primarily to provide an opportunity for the superior student to intensify and deepen his or her knowledge of the major, to permit closer associations with professors in the student’s area of concentration, and to prepare the student for research, thesis preparation, and other work at the graduate level in the major areas.

Minimal requirements for graduation with Departmental Honors are:
1. an over-all average of at least 3.300;
2. six credit hours or more in independent study, senior thesis, or designated advanced or special honors courses specified by the department, with grades of at least B;
3. an average in the major of at least 3.500.

Some departments specify additional requirements; the prospective Departmental Honors student should confer with the Honors Advisor within the department about specific requirements.

The College of Engineering offers a professionally oriented honors program which is described in their respective listing elsewhere in the Bulletin.

FOOTE FELLOWS PROGRAM

The Foote Fellows program, established in honor of former University of Miami President, Edward T. Foote II, each year gives a highly selected group of incoming first-year undergraduate students an opportunity to explore a wide range of academic pursuits and interests across the curriculum. Foote Fellows, who are required to fulfill certain areas of study determined by their individual school or college, are exempted from completing University general education requirements. They also receive special academic advising and mentoring as well as the opportunity to participate in cultural, social, and educational events.

HONORS PROGRAM IN EXERCISE PHYSIOLOGY (HPEP)

The Kinesiology and Sports Sciences Department offers an accelerated Masters degree program for students who have completed their 4-year undergraduate program in Exercise Physiology. It allows students to complete their Masters degree in Exercise Physiology within one year of their BS degree obtained in that major.
The additional year of study will enable students to complete all requirements leading to a Master of Science degree in Exercise Physiology in the School of Education, (M.S. Ed.), in 5 years. To be considered applicants must be in the top 10% of their high school graduating class. Students must have a minimum SAT score of 1300 or an ACT score of 30 and an Unweighted GPA of 3.75. The HPEP application form and supporting materials must be submitted no later than November 1st of the applicant’s senior year. A review of completed applications will begin by the end of November.

For further information and application forms please go to the following web address: www.miami.edu/dualdegree.

HONORS PROGRAM IN LATIN AMERICAN STUDIES (HPLA)

The Honors Program in Latin American Studies (HPLA) is a dual degree program that allows students to receive a Bachelor of Arts and Master of Arts in five years following a rigorous, efficient, accelerated curriculum. This highly selective group of students will enjoy close faculty mentoring and the opportunity to engage in specialized research projects with faculty. Students will receive first-hand experience in their regions of focus by studying abroad. Most study abroad opportunities are for duration of six months. Applicants must be high school seniors in the top 10% of their class and must have a minimum SAT I score of 1360 or (ACT 31). In addition to the regular Application for Admission to the University, the applicant must complete a separate application form for the Honors Program in Latin American Studies. The HPLA application form and supporting materials must be submitted no later than November 1st of the applicant’s senior year. A review of completed applications will begin by the end of November.

For further information and application forms please go to the following web address: www.miami.edu/dualdegree.

HONORS PROGRAM IN MARINE GEOLOGY (HPMG)

The Honors Program in Marine Geology (HPMG) allows exceptional students to pursue an accelerated program in the undergraduate Geological Sciences and graduate Marine Geology and Geophysics programs. The degree consists of an undergraduate Bachelor of Sciences degree in Geological Sciences from the College of Arts and Sciences, combined with a graduate Master of Science degree from the Division of Marine Geology and Geophysics at the University of Miami Rosenstiel School of Marine and Atmospheric Science. Applicants must be high school seniors in the top 10% of their class and must have a minimum SAT I score of 1360 or (ACT 31). In addition to the regular Application for Admission to the University, the applicant must complete a separate application form for the Honors Program in Marine Geology. The HPMG application form and supporting materials must be submitted no later than November 1st of the applicant’s senior year. A review of completed applications will begin by the end of November.

For further information and application forms please go to the following web address: www.miami.edu/dualdegree.

HONORS PROGRAM IN MEDICINE (HPME)

The Honors Program in Medicine (HPME) provides an opportunity for outstanding high school seniors who are seeking careers in medicine or medical science to obtain the Bachelor of Science and Doctor of Medicine degrees in seven or eight years.
This program has been designed by the School of Medicine and the College of Arts and Sciences. It provides a plan whereby students entering the University of Miami are admitted simultaneously into the Honors Program and a special Privileged Studies Program in the College of Arts and Sciences which allows HPME students to participate in an enriched and challenging curricular experience without the strictures of conventional distribution requirements. HPME students are secure in the knowledge that they will have a place in the University of Miami School of Medicine as early as three years provided they maintain a cumulative grade point average of 3.700 in the sciences as well as an overall 3.700 GPA and score at least a 30 on the MCAT exam.

Applicants must have had in high school, or be in the process of completing at the time of application, four years each of English and mathematics and one year each of biology, chemistry, and physics. A course in calculus must be taken before beginning the program. Applicants who would like to be considered must have minimum scores of 1400 on the SAT I (or 32 ACT), be in the top 5% of their high school graduating class and have an unweighted GPA of 3.750. College Entrance Examination SAT II Subject Tests must be taken in mathematics, and either biology, chemistry, or physics and have a minimum score of 600. These tests must be taken no later than the October testing date of the applicant's senior year in high school. In addition to the regular Application for Admission to the University, the applicant must complete a separate application form for the Honors Program in Medicine. The HPME application form and all supporting materials must be submitted by November 1 of the applicant’s senior year. A review of completed applications will begin by the end of November. Selected applicants will be invited for an on-campus interview with a member of the HPME Admission Committee.

For further information and application forms please go to the following web address: www.miami.edu/dualdegree.

HONORS PROGRAM IN PHYSICAL THERAPY (HPPT)

The University of Miami offers the Honors Program in Physical Therapy to high school graduates with high academic ability and achievement seeking careers in physical therapy. Participants may earn both the Bachelor of Science in Health Science (B.S.H.S.) and the Doctor of Physical Therapy (DPT) degrees in a six-year accelerated program, rather than the customary seven years.

The Honors Program in Physical Therapy is a cooperative venture of the School of Nursing and Health Studies and the School of Medicine, with students majoring in Health Sciences. Students pursue an enriched and highly challenging undergraduate curriculum, secure in the knowledge that they will have a place in the graduate physical therapy program after successful completion of three years of pre-physical therapy curriculum.

Applicants must be in the top 5% of their class and have a minimum SAT I score of 1360 (or ACT 31) and an unweighted GPA of 3.75. These tests must be taken no later than the December testing date of the applicant’s senior year in high school. In addition to the regular Application for Admission to the University, the applicant must complete a separate application form for the Honors Program in Physical Therapy. The Honors Program in Physical Therapy application form and all supporting materials must be submitted no later than November 1st of the applicant’s senior year.

For further information and application forms please go to the following web address: www.miami.edu/dualdegree.
HONORS PROGRAM IN LAW (HPLW)

The University of Miami offers the Honors Program in Law (HPLW) which allows excellent students with high academic ability to gain admission to both undergraduate study and to graduate study in the law school. Such an achievement eliminates the pressure of applying to law school and gives qualified students the chance to complete both Bachelor’s and Jurist Doctorate degree in 6 years. Applicants who wish to be considered for admission must be high school seniors in the top 5% of their class, have a minimum SAT I score of 1400 or (ACT 32) and an unweighted GPA of 3.750. In addition to the regular Application for Admission to the University, the applicant must complete a separate application form for the Honors Program in Law. The HPLW application form and supporting materials must be submitted no later than November 1st of the applicant’s senior year. A review of completed applications will begin by the end of November.

For further information and application forms please go to the following web address. www.miami.edu/dualdegree.

COURSES OFFERED IN HONORS - Dept. Code: HON

A list of these courses varies from semester to semester; an accurate list of offerings for a particular semester may be obtained from the Honors Program website (www.miami.edu/honorsprogram) or myUM.

HONOR SOCIETIES

The following honor societies have chapters at the University of Miami:

Alpha Epsilon Delta (Pre-Med)
Alpha Epsilon Rho (Electronic Media)
Alpha Eta Mu Beta (Biomedical Engineering)
Alpha Kappa Delta (Sociology)
Alpha Lambda Delta (Freshmen General Scholarship)
Alpha Phi Sigma (Criminology)
Alpha Pi Mu (Industrial Engineering)
Alpha Psi Sigma (Criminology)
Alpha Rho Chi (Architecture)
Beta Alpha Psi (Accounting)
Beta Beta Beta (Biology)
Beta Gamma Sigma (Business)
Chi Epsilon (Civil, Architectural and Environmental Engineering)
Eta Kappa Nu (Electrical and Computer Engineering)
Golden Key National Honor Society (General Scholarship)
Honors Students’ Association (General Scholarship)
Mortar Board (General Scholarship)
Omicron Delta Kappa (General Scholarship)
Phi Alpha Theta (History)
Phi Beta Kappa (General Scholarship)
Phi Kappa Phi (General Scholarship)
Phi Lambda Pi (General Scholarship)
Phi Sigma Tau (Philosophy)
Pi Delta Phi (French)
Pi Kappa Lambda (Music and Music Education)
Pi Sigma Alpha (Political Science)
Pi Tau Sigma (Mechanical and Aerospace Engineering)
Psi Chi (Psychology)
Rho Rho Rho (Marine Science)
Sigma Delta Pi (Spanish)
Sigma Gamma Epsilon (Geological Sciences)
Sigma Tau Delta (International English)
Sigma Theta Tau (Nursing)
Tau Beta Pi (Engineering)
Tau Sigma Delta (Architecture)
Theta Alpha Kappa (Religious Studies)

The Ultimate UM EXPERIENCE (UMX) – DEPT CODE: UMX 100

This one-credit elective course is taught by University of Miami faculty, administrators, and advisors across different disciplines as a way of providing mentoring to incoming students. The objective is to help new students transition to college life while introducing them to the many services offered by the university and in the surrounding community.

UMX 100 provides a firsthand experience in utilizing UM resources necessary for success in college and beyond. Specifically, students will be exposed to campus leadership opportunities, academic and career planning, university traditions, study abroad opportunities, personal wellness programs, as well as advising and registration. UMX 100 meets once a week for 50 minutes.

The UMX 100 sections open to ALL UM freshman and transfer students are:

- Arts and Sciences General Majors
- Arts and Sciences Undeclared Students
- Sports and Wellness
- International Students

The UMX 100 sections available to students declaring majors in the following areas:

- Psychology and Neuroscience Majors
- Nursing/Health Science Majors
- Education Majors
- Business Majors (Pre-Law/Pre-MBA)

The UMX 100 sections offered to those students who represent the university through the following programs:

- Hammond Scholars
- UM Student Athletes

For any questions pertaining to UMX 100, please contact the Camner Academic Resource Center at 305-284-2800.
Freshman Seminars

FFA 190-199. Freshman Seminars in Arts
FLT 190-199. Freshman Seminars in Literature
FNS 190-199. Freshman Seminars in Natural Science
FPR 190-199. Freshman Seminars in Philosophy/Religion
FSS 190-199. Freshman Seminars in the Social Sciences

Conceived as alternatives to standard freshman survey courses, Freshman Seminars offer a limited number of students a small class focused on a specific topic. The seminars are interdisciplinary in nature and/or experimental in subject and design. Seminars are taught by distinguished faculty from a wide variety of academic disciplines. No student may take more than one. Freshman Seminars are 3 credit courses that may be used to fulfill general education requirements in natural sciences, social sciences, or humanities (literature, fine arts, philosophy, and religion).
RESEARCH AND SPONSORED PROGRAMS

OAK RIDGE ASSOCIATED UNIVERSITIES
Since 1956, students and faculty of the University of Miami have benefited from its membership in Oak Ridge Associated Universities (ORAU). ORAU is a consortium of 91 colleges and universities and a contractor for the U.S. Department of Energy (DOE) located in Oak Ridge, Tennessee. ORAU works with its member institutions to help their students and faculty gain access to federal research facilities throughout the country; to keep its members informed about opportunities for fellowship, scholarship, and research appointments; and to organize research alliances among its members.

Through the Oak Ridge Institute for Science and Education (ORISE), the DOE facility that ORAU operates, undergraduates, graduates, postgraduates, as well as faculty enjoy access to a multitude of opportunities for study and research. Students can participate in programs covering a wide variety of disciplines including business, earth sciences, epidemiology, engineering, physics, geological sciences, pharmacology, ocean sciences, biomedical sciences, nuclear chemistry, and mathematics. Appointment and program length range from one month to four years. Many of these programs are especially designed to increase the numbers of underrepresented minority students pursuing degrees in science- and engineering-related disciplines. A comprehensive listing of these programs and other opportunities, their disciplines, and details on locations and benefits can be found in the ORISE Catalog of Education and Training Programs, which is available at http://www.orau.gov/orise/educ.htm, or by calling either of the contacts below.

ORAU’s Office of Partnership Development seeks opportunities for partnerships and alliances among ORAU’s members, private industry, and major federal facilities. Activities include faculty development programs, such as the Ralph E. Powe Junior Faculty Enhancement Awards, the Visiting Industrial Scholars Program, consortium research funding initiatives, faculty research and support programs as well as services to chief research officers.

For more information about ORAU and its programs, contact Dr. Helena Solo-Gabriele, ORAU Councilor for University of Miami at 305-284-2908; or contact Ms. Monnie E. Champion, ORAU Corporate Secretary, at 865-576-3306; or visit the ORAU Home Page (http://www.orau.org).

PATENT AND COPYRIGHT REGULATIONS
Discoveries or inventions, whether or not subject to patent or copyright, developed by students as a result of research done or in connection with theses, dissertations or problems pertaining thereto, or as a result of a program of research financed wholly or in part by University funds, or by funds under the control of the University shall be the exclusive property of the University except as may be otherwise required by the terms of research grants or contracts. The University Patent and Copyright policy provides for the inventor(s) to share in any royalties received for any patented or patentable discovery or invention in which the University has a property interest. Any such discovery or invention shall be so disclosed promptly, but in any event within a period of not more than two months, to the Office of Technology Transfer. For specific information regarding the Policy, contact the Office of Technology Transfer, Medical Campus, 243-5689.

USE OF HUMAN SUBJECTS IN RESEARCH
All research that involves the use of human subjects must be reviewed and approved by one of the University Institutional Review Boards for the Protection of Human Subjects in Research. This policy applies to both funded and non-funded faculty and student research. Any individual student research project, including thesis or dissertation, that involves human subjects must be approved by one of the committees prior to initiation of the research. If there are any questions on whether or not a project constitutes human subjects research, please refer to the policies and procedures on human subject research which can be found at www.hsro.miami.edu. For additional information, contact the Human Subjects Research Office at (305) 243-3195.
The University of Miami maintains a Veterans Affairs (V.A.) Office in the Office of the Registrar, 121 University Center, to assist veterans and dependents of veterans who are entitled to V.A. educational benefits under Chapter 30, 31, 32, 33, or Chapter 35 of Title 38, U.S. Code, and Chapter 1606 or Chapter 1607, Title 10, USC. Anyone needing information on Veterans Benefits is advised to contact the Office of the Registrar or visit the Registrar’s website at www.miami.edu/registrar and select “Veteran Information”.

V.A. students with previous postsecondary educational training/experience must request official transcript(s) be sent to the school. If the transcript has not been received prior to the end of the student’s initial semester, or as specified in the guidelines under the program he/she is enrolled in, the Veteran Affairs Office will not re-certify the student for V.A. educational benefits. The Veteran Affairs Office may re-certify the student after the transcript has been received.

The V.A. student’s previous training and/or experience will be evaluated by the school. Should credit(s) be accepted and/or granted, the V.A. student’s tuition and training time will be reduced proportionally. The V.A. and the student will receive a written notice of the credit(s) allowed.

STANDARDS OF PROGRESS POLICY FOR VETERANS

Satisfactory progress is indicated by a Satisfactory Progress Average (SPA), which is a variation of the Quality Point Average (QPA). The SPA is computed by the following formula:

A=4
B=3
C=2
D=1
E=0
IE=0
F=0
IF=0
NG=0

Note that “E’s”, “F’s”, “IE’s” and “IF’s” are included in the SPA.

A grade of CR will be counted as CR=2.

The SPA is determined by dividing the total quality points earned by the credits attempted.

When a course is dropped with a grade of W, the V.A. requires a student to repay any benefits received for that course unless the V.A. determines there are mitigating circumstances involved.

Benefits will not be paid for courses in which a student receives an NG or NC.

- An SPA of 2.0 or greater for undergraduate students, or 3.0 or greater for graduate students, is satisfactory progress.
• Less than 2.0 for undergraduate, and less than 3.0 for graduate students, is not satisfactory.

• Law and M.D. students will be considered to be making satisfactory progress as long as they meet the academic standards set by their schools for retention in their degree programs.

• The SPA is non-cumulative. It is computed each term on a one-term basis.

• Any term a student’s SPA is less than 2.0 for undergraduate or 3.0 for graduate, he/she will be notified that he/she is not making satisfactory progress. He/she will be certified, in a probationary status, for only one additional semester.

• If, at the end of this additional semester, his/her SPA for that semester is still below the satisfactory level, the V.A. will be notified of the unsatisfactory progress and his/her educational benefits will be terminated.

• A student whose V.A. educational benefits have been terminated for unsatisfactory progress may petition the Veteran Affairs Office, 121 University Center, to be re-certified after one semester has elapsed.

• The Veteran Affairs Office may re-certify the student for V.A. educational benefits only if there is a reasonable likelihood that the student will be able to attain and maintain satisfactory progress for the remainder of the program.

FOR V.A. PAYMENT OF BENEFITS PURPOSES

• An “I” (Incomplete) designation for a course must be converted to a credit grade counting toward graduation, or a failing grade, by the end of one calendar year unless permission for a delay is granted by the Academic Dean.

• An “NG” (no grade) designation for a course must be converted to a credit grade counting toward graduation, or a failing grade, by the end of one regular semester unless permission for a delay is granted by the Academic Dean.

• If permission is obtained, a memo signed by the Academic Dean must be given to the Veteran Affairs Office during the semester in which the “I” or “NG” was to be removed. This memo should also state period of time for which delay is approved.

• If a memo giving permission for a delay in the “I” or “NG” removal is not received by the end of the semester in which the “I” or “NG” was to be removed, the V.A. will be notified of the incomplete grade resulting in loss of educational benefits for that course.

Please consult with our office regarding regulations for ”IP’s” received in Thesis, Research, or Dissertation.

There is an official period after each registration in which a student may drop a course without a “W” appearing on his/her grade report. This period is not to be confused with the last date to drop a course with a “W” grade. Please check the academic calendar on the Registrar’s website for dates: www.miami.edu/registrar.
CLASS ATTENDANCE AND ABSENCE

- Regular and punctual class attendance is vital for all students.
- It is the student’s responsibility to know the instructor’s policies regarding examinations, penalties for absences, and late or missed work.
- A copy of the student’s transcript will be placed in the student’s permanent file maintained by the Veteran Affairs Office.

Because of the far-reaching effects of these revisions in the V.A. educational benefits program, it is suggested that you exercise care and judgment in your program planning and in the selection of your courses. V.A. educational benefits will only pay for courses that are toward the program in which you are enrolled.

Veterans and children of deceased or totally disabled veterans receive training allowance in proportion to the schedule carried. The full load required to receive full training allowance is 12 in undergraduate school (nine in Graduate School).
INTRODUCTION

The School of Architecture offers a five-year, accredited professional program leading to the Bachelor of Architecture degree. The Bachelor of Architecture fulfills the educational requirements for professional registration. It offers specialized architectural study through upper-level studios and architecture electives, as well as opportunities for the study of liberal arts through the elective sequence leading to a minor.

MISSION

- Prepare students for professional leadership and lifelong learning in architecture, urbanism and related fields.
- Preserve and develop knowledge for the profession through research and practice.
- Share knowledge locally and internationally through community service.
- Promote building and community design goals of environmental responsibility, social equity and economic sustainability.

ACCREDITATION

The school is a member of the Association of Collegiate Schools of Architecture and the Association of Collegiate Schools of Planning, and is fully accredited by the National Architectural Accrediting Board, who asks each school to include the following paragraph on professional degrees in all literature:

In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted a 6-year, 3-year, or 2-year term of accreditation, depending on the extent of its conformance with established educational standards. Master’s degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education.

Doctor of Architecture and Master of Architecture degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

The School of Architecture’s location in Coral Gables within the Miami metropolitan area provides an outstanding laboratory for research and advanced study; the challenges of conservation and development are intense in one of the nation’s fastest growing urban areas. These challenges result in an increasing demand for skilled professionals. Students have the opportunity to work with the faculty in the exploration of theoretical issues and in the resolution of practical problems. The School of Architecture values and sustains a
creative, open and supportive environment, emphasizing personalized instruction in small classes and studio courses.

RESOURCES

The school’s resources, including a state-of-the-art computer laboratory, are enhanced by the interdisciplinary opportunities offered by the other schools and colleges of the University of Miami. A distinguished faculty is joined each semester by internationally renowned visiting scholars and designers.

Other programs that offer academic opportunities for undergraduate architecture students include: the Historic Preservation Certificate, the Master of Urban Design, the BSAE/MARCH and the BARCH/MBA.

ACADEMIC POLICIES

Admission

Applications for incoming freshmen are processed and reviewed by the Office of Admission. Enrollment in the School of Architecture is selective and highly competitive. Application to the Bachelor of Architecture program is requested by January 1st. Early application is encouraged.

Freshman: Admission decisions are based on the following factors: portfolio, secondary school record, SAT/ACT score, counselor’s evaluation and the student essay.

Transfer Students: The academic accomplishments of each transfer student will be evaluated on an individual basis. A 3.0 G.P.A. is required for transfer admission. A portfolio is required for advanced placement in the design sequence of the Bachelor of Architecture Program. Application deadline for the School of Architecture program is March 1st.

Transfer Students

All transfer students requesting advanced placement in design must provide a portfolio of previous academic design and graphic work and three academic recommendations. Students accepted into third year design will be required to complete a transitional design course (ARC 301) during the summer prior to enrollment. The courses MTH 130 and PHY 103, or their equivalent be completed before admission into ARC 305.

Student Responsibilities

Students in the School of Architecture are responsible for planning their own programs and for meeting degree requirements. It is the student’s responsibility to understand and fully comply with all the provisions set forth in this Bulletin and written changes to their program of study. Students are provided assistance by advisors and faculty members. Written requests for variation from program or school requirements are reviewed by a faculty committee.
Academic Progress and Probation

The School of Architecture will review each student’s record at the end of each semester. When a student’s semester or cumulative average is less than stated below, or progress toward degree completion is unsatisfactory, the student will be placed on academic probation or warning in accordance with School of Architecture policies and procedures. Students on probation are not permitted to enroll in more than 13 semester hours, shall meet on a monthly basis with their academic advisor, and may have a STOP placed upon their future enrollment until grades for work-in-progress are reviewed. First semester freshmen who have a semester grade-point average below 2.0 shall be placed on probation.

<table>
<thead>
<tr>
<th>Credits earned</th>
<th>CGPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fewer than 33 credits</td>
<td>2.0</td>
</tr>
<tr>
<td>33-64 credits</td>
<td>2.1</td>
</tr>
<tr>
<td>65-96 credits</td>
<td>2.2</td>
</tr>
<tr>
<td>More than 96 credits</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Students must complete all Architecture Design studios with a grade of C- or higher. Students receiving two consecutive C- grades in architecture design studios will have to repeat the later course. Students receiving a grade of D+ or lower in an architecture design studio must repeat the studio and will be restricted to a 15 credit semester load. The student will meet with an academic advisor on a monthly basis and will be reviewed prior to continuation.

Academic Dismissal

A student in the School of Architecture whose CGPA or progress toward degree completion falls below the level of the minimum standards of the University of Miami may be dismissed. In the School of Architecture this includes a student who receives three grades of D+ or lower in design courses.

Class Attendance and Absences

Class attendance is mandatory for all architecture courses; three unexcused absences constitutes grounds for dismissal from the course and/or a failing grade. Students are required to be present for an entire design review, therefore, students arriving late or departing early from class will be considered absent. Excused absences require written notification and are granted by the instructor.

Failing Grades or Incompletes

A required architecture course in which a student receives a failing grade must be repeated during the first subsequent semester in which the course is offered. Incompletes can be given only for reasons of serious illness or exceptional hardship.

Student Work

The University may retain selected student work and may place it in the architecture archives for exhibition, publication, or other use as the University deems appropriate. Each student in architecture is encouraged to maintain a design portfolio of every project undertaken throughout the five-year program.
Permission to Take Courses at Another University

A form is available from the Office of Academic Services and should be completed and approved PRIOR to off-campus enrollment. Students are encouraged to provide complete documentation for each course request form. Each student requesting transfer credit must supply the University of Miami registrar with certified transcripts. Additionally, each student should review transfer evaluations to be certain that all courses are correctly evaluated for credit. The proper transmission and transfer of credits is the responsibility of the individual student. The last 45 credits towards the degree must be completed at the University of Miami.

Changes to Academic Requirements

The School reserves the right to change academic requirements.

Computer Requirement

Undergraduate and graduate students entering the program are required to purchase their own computers for use in the design studio. The School of Architecture computing resources are accessible via a wireless network with an approved device and subject to School and University policy. System requirements are published on the School of Architecture web site.

REQUIREMENTS FOR GRADUATION

The following courses are part of the required curriculum for all students pursuing the Bachelor of Architecture degree:

A. AREAS OF PROFICIENCY

English Composition: ENG 105 - English Composition I and ENG 106 - English Composition II

Mathematics: MTH 130 - Introductory Calculus

Writing across the curriculum: (minimum 15 credits required)
All required History of Architecture and Architecture Theory courses in the B.Arch. curriculum

B. AREAS OF KNOWLEDGE (24 credits required)

Arts: (6 credits required):
ARC 101 - Architecture Design I, ARC 111 Drawing I

Humanities: (6 credits required):
ARC 121 - Architecture and Culture, ARC 267 History of Architecture I: Ancient, Medieval and Renaissance

Natural World (Natural Sciences): (6 credits required):
PHY 103 - General Physics, and another course from the University’s approved master list of Natural Science courses taken as a non architecture elective.

People and Society (Social Sciences): (6 credits required):
Any History course
BACHELOR OF ARCHITECTURE MINOR REQUIREMENT

The Architecture curriculum requires a minor outside the School of Architecture, to be taken as non-architecture elective courses. The minor may not be satisfied with architecture elective courses. Many programs at the University award minors for twelve or more credits of study. Students are advised to consult the Bulletin and the chair of the appropriate department for details.

DEGREE PROGRAMS - UNDERGRADUATE

BACHELOR OF ARCHITECTURE CURRICULUM

Tabular listing of the course requirements for the Bachelor of Architecture degree:

Specific procedures and policies are detailed in the student handbook available from the Office of Academic Services.

<table>
<thead>
<tr>
<th>FIRST YEAR</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 101 Architecture Design I</td>
<td>6</td>
</tr>
<tr>
<td>ARC 111 Drawing I</td>
<td>3</td>
</tr>
<tr>
<td>ARC 121 Architecture and Culture</td>
<td>3</td>
</tr>
<tr>
<td>MTH 130 Introductory Calculus</td>
<td>3</td>
</tr>
<tr>
<td>ENG 105 English Composition I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
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<table>
<thead>
<tr>
<th>SECOND YEAR</th>
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<tbody>
<tr>
<td>ARC 203 Architecture Design III</td>
<td>6</td>
</tr>
<tr>
<td>ARC 223 Architecture and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>ARC 230 Building Technology I</td>
<td>3</td>
</tr>
<tr>
<td>ARC 267 History of Architecture I: Ancient, Medieval and Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>ARC 213 Drawing III</td>
<td>3</td>
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<td><strong>Total Credits</strong></td>
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<table>
<thead>
<tr>
<th>THIRD YEAR</th>
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<tbody>
<tr>
<td>ARC 305 Architecture Design V</td>
<td>6</td>
</tr>
<tr>
<td>ARC 362 Building Technology I</td>
<td>3</td>
</tr>
<tr>
<td>CAE 213 Building Structures I</td>
<td>3</td>
</tr>
<tr>
<td>History Elective</td>
<td>3</td>
</tr>
<tr>
<td>Non Architecture Elective</td>
<td>3</td>
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<tr>
<td><strong>Total Credits</strong></td>
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<table>
<thead>
<tr>
<th>FOURTH AND FIFTH YEARS</th>
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<tbody>
<tr>
<td>ARC 407 Architecture Design VII</td>
<td>6</td>
</tr>
<tr>
<td>ARC 408 Architecture Design VIII</td>
<td>6</td>
</tr>
<tr>
<td>ARC 452 Practice of Architecture II</td>
<td>3</td>
</tr>
<tr>
<td>ARC Professional Practice Elective</td>
<td>3</td>
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<tr>
<td>ARC History Elective</td>
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</tr>
<tr>
<td>ARC 371, 372, 373, 374, 390, 475, 476, 554, 570</td>
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</tr>
<tr>
<td>ARC 509 Architecture Design IX</td>
<td>6</td>
</tr>
<tr>
<td>ARC 510 Architecture Design X</td>
<td>6</td>
</tr>
<tr>
<td>Minor</td>
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<tr>
<td>Architecture Electives</td>
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<tr>
<td><strong>Total Credits</strong></td>
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</tr>
<tr>
<td><strong>TOTAL CREDITS FOR DEGREE</strong></td>
<td><strong>171</strong></td>
</tr>
</tbody>
</table>

Curriculum Notes

The School reserves the right to retain all student projects done in for academic credit. MTH 130 AND ENG 105 are entry-level courses. Courses taken to achieve entry-level status cannot be considered towards the total credits required for the B.Arch. Degree.
Electives

The program requires four types of electives:

Architecture electives (7 courses)
Investigations in areas of architectural interest beyond the core requirements
Professional practice elective (1 course)
Focused examination of a topic related to practice
Non-Architecture electives (2-3 courses)
Explorations of general University offerings
Minor (4-5 courses)
Concentrated study in an area outside of architecture

A minor or its equivalent is required for all students. Areas are selected in consultation with faculty advisors.

DUAL DEGREE PROGRAMS

A six year dual degree program leading to a Bachelor of Science in Architectural Engineering and a Master of Science in Architecture is also available. The program is open to exceptional students who are admitted to the graduate program at the end of their junior year. Upon completion of this program, graduates are eligible for professional registration as both an engineer and an architect. The course requirements for the BSAE/MArch program are as follows:

| Bachelor of Science in Architectural Engineering and Master of Architecture |
|---|---|---|---|---|---|---|
| Year 1 | CAE 111 Introduction to Engineering I | 3 | CAE 112 Introduction to Engineering II | 2 |
| | ENG 105 English Composition I | 3 | ENG 107 Writing About Science | 3 |
| | MTH 151 Calculus I for Engineers | 5 | MTH 162 Calculus II | 4 |
| | PHY 205 University Physics I | 3 | PHY 206 University Physics II | 3 |
| | ARC 121 Architecture & Culture | 3 | PHY 208 University Physics II Lab | 1 |
| | | 3 | People and Society Elective* | 3 |
| | **Total** 17 | | **Total** 16 | |
| Year 2 | ARC 567 History of Architecture I (ARC 294) | 3 | CAE 210 Mechanics of Solids I | 3 |
| | CAE 210 Mechanics of Solids I | 3 | CAE 212 Structural Laboratory | 1 |
| | ARC 530 Building Tech I: Mat.s & Methods (ARC 230) | 3 | CHM 151 Chemistry for Engineers I | 3 |
| | PHY 207 University Physics III | 3 | CHM 153 Chemistry Lab for Engineers I | 1 |
| | PHY 209 University Physics Lab | 1 | IEN 311 Applied Probability & Statistics I | 3 |
| | MTH 211 Calculus III | 3 | MTH 311 Ordinary Differential Equations | 3 |
| | **Total** 16 | | MAE 303 Thermodynamics I | 3 |
| | **Total** 17 | | **Total** 18 | |
| Year 3 | CAE 310 Structural Analysis | 3 | CAE 321 Steel Structures (ARC 532) | 3 |
| | CAE 330 Fluid Mechanics | 3 | CAE 380 Electrical & Illumination Systems (ARC 563) | 3 |
| | Technical Elective* | 3 | CAE 381 Mechanical Systems for Buildings (ARC 562) | 3 |
| | ARC 511 Drawing I | 3 | 513 Computing I | 3 |
| | ARC 501 Architecture Design I (ARC 292) | 6 | ARC 502 Architecture Design II (ARC 293) | 6 |
| | **Total** 18 | | **Total** 18 | |
| Summer (REQUIRED 10 week semester) | ARC 503 Architecture Design III | 6 | |
### Year 4

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CAE 480 Design of Environ.I Systems for Buildings</td>
<td>3</td>
</tr>
<tr>
<td>CAE 470 Foundation Eng. &amp; Earth Retaining Sys</td>
<td>3</td>
</tr>
<tr>
<td>CAE 320 Concrete Structures (ARC 533)</td>
<td>3</td>
</tr>
<tr>
<td>ARC 504 Architecture Design IV (Comprehensive)</td>
<td>6</td>
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<tr>
<td>People and Society Elective*</td>
<td>3</td>
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<tr>
<td><strong>Total</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CAE 370 Geotechnical Engineering I</td>
<td>3</td>
</tr>
<tr>
<td>CAE 371 Geotechnical Laboratory I</td>
<td>1</td>
</tr>
<tr>
<td>CAE 402 Professional Engineering Practice</td>
<td>3</td>
</tr>
<tr>
<td>CAE 460 Construction Management (Arch Elective)</td>
<td>3</td>
</tr>
<tr>
<td>ARC 531 Building Tech II</td>
<td>3</td>
</tr>
<tr>
<td>ARC 568 Architecture History II</td>
<td>3</td>
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<tr>
<td><strong>People and Society Elective</strong></td>
<td><strong>3</strong></td>
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<td><strong>Total</strong></td>
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### Year 5

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<th>Course</th>
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<tbody>
<tr>
<td>CAE 403 Senior Design Project I</td>
<td>1</td>
</tr>
<tr>
<td>History of Architect (ARC 476)</td>
<td>3</td>
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<tr>
<td>ARC 500 Theory of Architecture and the Environment</td>
<td>3</td>
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<tr>
<td>ARC 507 Architecture Design</td>
<td>6</td>
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<tr>
<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CAE 404 Senior Design Project II</td>
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<tr>
<td>Architecture Elective</td>
<td>3</td>
</tr>
<tr>
<td>ARC 609 Architecture Design</td>
<td>6</td>
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<tr>
<td><strong>Total</strong></td>
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### Year 6

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 517 Construction Documents</td>
<td>3</td>
</tr>
<tr>
<td>ARC 652 Management of Professional Practice</td>
<td>3</td>
</tr>
<tr>
<td>ARC 699 Architectural Thesis Preparation</td>
<td>3</td>
</tr>
<tr>
<td>Architecture Elective</td>
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<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>AEN Design Elective*</td>
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<tr>
<td>Advanced PS/HA Elective</td>
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</tr>
<tr>
<td>Architecture Elective</td>
<td>3</td>
</tr>
<tr>
<td>ARC 610 Architecture Design Degree Project</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

* To be selected from approved lists of People and Society/Humanities and Arts, Technical and Design Electives

### MINOR

A minor in architecture is available to non-architecture majors as an option in the undergraduate architecture program. The purpose of the minor is to provide a general understanding and appreciation of the discipline of architecture. The minor does not satisfy professional requirements in architecture but does offer an introductory basis for further study at the undergraduate or graduate level. The program requires 12 credit hours in architecture courses.

Four architecture electives from the following list of courses: ARC 121, 122, 141, 191, 223, 267, 268, 294, 323, 371, 372, 373, 374, 390, 475, 476, 481, 521, 544, 551, 554, 584, 585, 586, 590 may be taken to complete the requirements for the minor.

### HONORS

**Henry Adams Medal**
Awarded in conjunction with the American Institute of Architects to the highest-ranking graduating student for scholarship and excellence in a professional architecture program.

**Henry Adams Certificate**
Awarded in conjunction with the American Institute of Architects to the second highest-ranking graduating student for scholarship and excellence in a professional architecture program.

Other honors, distinctions, and awards are presented annually for excellent student performance.

[Architecture Course Listing](#)
INTRODUCTION

The College of Arts and Sciences offers courses leading to the degrees of:

Bachelor of Arts
Bachelor of Science
Bachelor of Fine Arts
Bachelor of Liberal Arts

Graduates with one of these degrees will have had a sound liberal arts introduction to the major fields of human knowledge. In addition to this background, each bachelor’s candidate has the opportunity to select an area of academic or of occupational interest. Within the degree may be built certain professional or pre-professional curricula leading to certification in teaching, or to dentistry, medicine, law, etc.

MISSION

The College of Arts and Sciences at the University of Miami is a community of scholars and students that encourages the quest for a deeper understanding of the human experience and fosters a personal commitment to lifelong learning, intellectual growth, and the enduring values of the liberal arts.

The College is dedicated to helping students develop analytical and communication skills, creative abilities, and a sense of civic responsibility needed in an increasingly complex society. It strives to provide them with a rigorous grounding in their chosen field, an awareness of the interconnectedness of disciplines, and an exposure to the discovery of new knowledge.

The College seeks to create an intellectual environment that enhances individual growth and supports scholarly activities and creative endeavors that augment human knowledge and understanding.

ACADEMIC POLICIES

The College of Arts and Sciences follows the general university academic policies outlined in the General Academic Information section of this Bulletin.

REQUIREMENTS FOR GRADUATION

BACHELOR OF ARTS AND BACHELOR OF SCIENCE DEGREES

Candidates for B.A. and B.S. degrees in the College of Arts and Sciences must complete the credit hours of work and achieve the quality point average specified for students in the University at large. These requirements are indicated in the Academic Procedures and Information section of this Bulletin.
I. Required Areas of Study. Courses taken for the major, the minor, and the writing requirement may also be used to satisfy the Areas of Study requirements of the College. In each department and program, the applicable prerequisites must be met before upper division courses can be taken. No more than six credits in any discipline may be used to satisfy the Areas of Study requirements.

A. English Composition    B.A. and B.S. degrees: 3-6 credits

Students must take English 105 and 106, or their approved equivalents, in the first year of residence. Students with an appropriate score on the Advanced Placement [AP] language and literature examination, or with an appropriate score on the International Baccalaureate [IB] higher level English examination, may earn 6 credits in English 105 and English 106. Those with an appropriate score on the SAT verbal or ACT verbal exams may be exempted from English 105. Those with transfer credit for English 105 will take English 106 or its equivalent in the first year of residence.

B. Languages    B.A. and B.S. degrees: 3-9 credits

Students must earn at least 3 credits of a language other than English at the 200 course level or higher. Special 100- and 200-level Spanish courses are required of heritage Spanish speakers who choose to fulfill the language requirement by taking Spanish. Students may fulfill the language requirement from the following: Arabic, Chinese, French, German, Greek, Haitian Creole, Hebrew, Italian, Japanese, Latin, Portuguese and Spanish.

C. People and Society (Social Sciences)    B.A. and B.S. degree: 12 credits

B.A. and B.S. degree candidates must earn twelve credits in the following social science disciplines: Africana Studies, American Studies, Anthropology (except APY 203), Economics, Ecosystem Science and Policy – ECS 113, ECS 302 ONLY, Geography and Regional Studies (except GEG 120), History, International Studies, Judaic Studies, Latin American Studies, Political Science, Psychology, Sociology, Urban Studies and Women’s and Gender Studies. No more than six credits may be earned in any one discipline.

One approved First Year seminar course (FSS) may be taken for the Social Sciences requirement.

D. Arts and Humanities    B.A. and B.S. degree: 12 credits

B.A. and B.S. degree candidates must earn twelve credits in the three areas listed below. At least three credits must be earned in each area.

**Fine Arts:** any courses in the departments of Art and Art History, Dance (except DAN 101-104), Musicology, Music Theory, and Theatre Arts count toward this requirement.

**Literature:** Literature courses in the departments of English (200-level and higher) and Modern Languages and Literatures (300-level and higher) count toward this requirement.

**Philosophy and Religious Studies:** courses in the departments of Philosophy and Religious Studies count toward this requirement.

One approved First Year seminar course (FFA, FLT, FPR) may be taken for the Arts and Humanities requirement.
E. Mathematics

B.A. degrees: 3-6 credits
B.S. degrees: 11-15 credits

B.A. degree candidates who do not place out of MTH 101 must take MTH 101 or MTH 107 during their first year in the College. In addition, all B.A. degree candidates must earn credit in one MTH course numbered 108 or above.

B.S. degree candidates must earn 11-15 credits, consisting of a Calculus sequence: MTH 161-162, MTH 171-172 or MTH 140-141-162 and either a) a computer course approved by the major department; or b) a statistics course approved by the major department.

F. Natural World (Natural Science)

B.A. degrees: 9 credits
B.S. degrees: 4-8 credits

B.A. degree candidates must earn nine credits in two of the following disciplines: Biology, Chemistry, Ecosystem Science and Policy – ECS 111, ECS 112, ECS 202 ONLY, Geological Sciences, Marine Sciences (except MSC 313 and 314), Physical Sciences, and Physics. APY 203 and GEG 120 may also be taken for this requirement.

B.S. degree candidates minoring in one of the subjects approved as a B.S. major must earn 4 additional credits, and those minoring in other subjects must earn 8 additional credits in one of the following departments: Biology, Chemistry, Geological Sciences or Physics. These credits must be taken in a department other than the major or the minor, and must be earned in courses that count toward a major in that department.

II. Writing

Every student must complete five (5) writing-oriented (W) courses beyond ENG 105 and 106. Students are required to write at least 4000 words in each W course. Writing assignments will be graded on both content and style. All literature and modern language literature courses receive writing credit. No more than 2 writing courses may be transferred and used toward the required writing intensive courses. The remaining 3 courses must be completed at the University of Miami.

III. Major

Every candidate for a degree must choose a major field. To find the requirements for the major, consult this Bulletin under the discipline concerned, and confer with the designated departmental representative. The candidate for the B.A. degree may choose a major from among the disciplines offering majors in the College of Arts and Sciences, and from the Department of Economics in the School of Business Administration. The candidate for the B.S. degree must choose a major from the following areas: Biochemistry and Molecular Biology, Biology, Chemistry, Computer Science, Ecosystem Science and Policy, Geological Sciences, Microbiology and Immunology, Neuroscience, Physics, or Psychology. The choice of a major field should be made not later than the beginning of the junior year and must be approved by the major department. Any student making unsatisfactory progress in a major may be required to change his/her major or to relinquish candidacy for the degree.

IV. Minor

All students (except for those majoring in Ecosystem Science and Policy) must complete a minor. For information about the selection of an appropriate minor, please see an advisor in the department of your major.
If the candidate for the B.A. degree presents Biology, Chemistry, Computer Science, Geological Sciences, or Mathematics as a major, the minor may not be selected from among these disciplines or from Biochemistry and Molecular Biology, Microbiology and Immunology, Physics, or Engineering. Subject to the foregoing, students may select a minor from any discipline in the College of Arts and Sciences, or from any School or College within the University offering a minor: College of Engineering, Schools of Architecture, Business Administration, Communication, Education, Marine and Atmospheric Science, Music or Nursing. Courses taken for the minor may also be used to satisfy the Areas of Study requirements of the College up to the limit of each area. Students planning a minor in Music should contact the School of Music for information regarding placement examinations in theory and applied music requirements.

V. Other Requirements.

Credit Only. Only free electives may be taken under this option. Courses which satisfy the major, the minor, the distribution requirements of the College and the general education requirements of the University may not be taken for credit only. Exemption. Exemption from a course or courses refers specifically to the following: a) credit by examination through the Advanced Placement (AP) or International Baccalaureate (IB) programs; b) advanced placement by proficiency examinations or test scores, with no credit earned; c) advanced standing and/or placement, with credit granted. Transfer Credits. Credits transferred from other institutions may not count towards the completion of a major or minor without the written approval of the department or program. General Electives. Sufficient for a total of 120 credits. Electives may be chosen from any courses offered by the University. The student should consult an advisor before selecting elective courses.

DEGREE PROGRAMS

BACHELOR OF FINE ARTS DEGREE

I. The candidate for the degree of Bachelor of Fine Arts must complete 120 credit hours with an overall quality point average of 2.0 or above as specified in departmental and program sections of this Bulletin.

II. The student must satisfy the College of Arts and Sciences distribution requirements for the Bachelor of Fine Arts by satisfactory completion of the General Education Requirements from the areas of study listed below:

1. Six credits of English Composition (English 105 and 106 or their equivalent).
2. MTH 101 and a course in math numbered 108 or above.
3. 5 writing oriented courses above ENG 105 and 106.
4. 6 credits in Humanities (from Literature, Philosophy, or Religious Studies)
5. 6 credits in Natural Sciences
6. 6 credits in Social Sciences

III. Students must satisfy the requirements of a major as determined by the Department of Art and Art History or the Department of Theatre Arts. Students must maintain at least a 3.0 average in their major.
BACHELOR OF LIBERAL ARTS DEGREE

I. The candidate for the degree of Bachelor of Liberal Arts must complete 120 hours with an overall quality point average of 2.0 or above.

II. He/she must satisfy the General Education Requirements of the University as set forth elsewhere in this Bulletin.

III. At least 60 of the 120 credit hours required must be in 300, 400, or 500-level courses. Of these, 30 credits must be completed in the College of Arts and Sciences.

IV. No more than 40 hours in 300-level or higher courses may be taken in any one department. No more than 52 hours (in total credits) may be earned in any one department.

V. Up to 30 of the 120 hours may be courses from other schools and colleges of the University of Miami except for those courses expressly excluded from recognition by the College. These credits include both lower and upper division courses. Students who exceed this maximum will have the number of credits required to graduate increased by the number earned over 30 credits.

VI. The student may, but is not required to, elect a major in a department. If a student fulfills the departmental requirements for the major, it will be recorded on the official transcript. No minor may be elected.

PRELAW PREPARATION

Although no specific curriculum is required in preparation for Law School, the Pre-Law Committee of the American Bar Association strongly recommends that students considering a career in Law should have a well-balanced education. This education should include courses requiring intensive writing, logical reasoning and critical thinking and reading skills.

The Office of Prelaw Advising, located in Ashe 112, provides a variety of services to all students interested in attending Law School. These services include:

1. Pre-Law Advising: confidential advising in preparation for law school (i.e. application process, general information, discussion of your concerns).
3. Pre-Law Newsletter: information about programs and events.
4. LSAT and LSDAS registration booklets (for juniors and seniors).
5. Campus-wide programs for pre-law students such as Law Day.
6. Programs and seminars in coordination with other University of Miami departments such as: School of Law Career Planning Center, School of Law Center for Ethics and Public Service, Toppel Career Planning and Placement, the Counseling Center, and the Reading and Study Skills Center.

In order to take advantage of the services listed above a student should complete a Pre-Law registration card at the beginning of the academic year.
The Max and Peggy Kriloff Fund is a fund that provides travel support for students earning degrees from the College of Arts and Sciences. The fund provides support for students to present papers, or posters at professional conferences worldwide. Students will need to fill out an application form available in Ungar 333 and submit it, along with the necessary supporting documentation to the Office of Graduate and Administrative Services in the Ungar Building.
UNDERGRADUATE ACADEMIC PROGRAMS

AEROSPACE STUDIES - Dept. Code: AIS
www.miami.edu/aerospace-studies

INTRODUCTION

The Department of Aerospace Studies represents the Air Force Reserve Officer Training Corps (AFROTC), at the University of Miami. Providing academic instruction and training experiences leading to commissioned service in the United States Air Force.

AFROTC is an educational program designed to provide college students the opportunity to become Air Force officers while completing a Bachelor’s degree. The AFROTC program provides superior hands-on leadership training and is designed to prepare cadets to assume positions of increasing responsibility as officers in service to their country.

Normally, the program is four years, but in some instances students can complete requirements in three years. The first two years of the program, the General Military Course (GMC), consist of a one hour class, three hours of leadership laboratory/practical military training, and two hours of organized physical conditioning each week. AFROTC cadets compete for entry into the last two years of the program, the Professional Officer Course (POC). Competition includes both quantitative and qualitative factors, such as grade-point average, unit commander’s evaluation, aptitude test scores and physical fitness test scores. If selected, cadets must complete a four-week summer Field Training Program at Maxwell Air Force Base in Montgomery, AL before entering the POC.

After earning their degree and successfully completing all Air Force ROTC requirements, cadets are commissioned as Air Force officers with a four-year active duty service commitment. Pilots, Combat Systems Officers and Air Battle Managers have longer service commitments upon completion of specialized training.

For more information, contact Detachment 155 Cadre at (305) 284-2870.

ENROLLMENT

There is no military obligation to enroll in AFROTC. To enroll students must meet the following criteria:

- Be a U.S. citizens or resident alien, or be able to become a U.S. citizen prior to attending Field Training the summer following sophomore year
- Be full-time college students, enrolled in 12 credits per semester
- Be able to participate in a demanding physical fitness program
- Be able to pass a Department of Defense Medical Examination
- Have solid moral character
- Maintain AFROTC minimum required grade point average
SCHOLARSHIPS

More than 70% of Air Force ROTC scholarships are awarded to undergraduate students in engineering or other scientific and technical disciplines. However, students in every degree program enjoy scholarship opportunities, as the Air Force seeks to engage students who excel both academically and militarily. Scholarships are awarded in increments of two, three, and four years. Air Force ROTC offers several types of scholarships. Type 1 covers full tuition and most required fees. Type 2 covers tuition and fees, but is capped at $18,000 annually. Type 7 scholarships are designated for in-state tuition-level institutions. All types of awards provide an allowance for books and a monthly non-taxable stipend. All scholarship cadets are required to meet academic, military, and physical fitness standards to earn and maintain scholarship benefits.

Additionally, University of Miami undergraduates enrolled in the Air Force ROTC program are assured annual 25% subsidy of the University’s tuition for up to four years. Students must maintain continuous enrollment in the AFROTC program and full time enrollment in one of the University’s undergraduate degree program. No application required. Awards are made automatically based on information provided by the University’s AFROTC detachment.

BENEFITS

All AFROTC cadets receive uniforms, books and equipment for ROTC classes at no cost. Upon being commissioned a Second Lieutenant in the Air Force, you will receive a starting salary and allowances worth more than $55,000 annually*. Free medical and dental care, 30 days paid annual vacation and educational benefits are also part of the compensation package.

*Based on 2011 Pay Chart and Miami FL Housing Allowance for an O-1*

EDUCATIONAL OBJECTIVES

AIS 101/102 Foundations of the United States Air Force (Lecture 1, Leadership Lab* 0)

Aerospace Studies 101/102 is a survey course designed to introduce students to the United States Air Force and Air Force Reserve Officer Training Corps. Featured topics include: Air Force heritage, military customs and courtesies, career opportunities, Air Force Core Values, interpersonal communications, and team building. Leadership Laboratory is mandatory for AFROTC cadets and complements this course by providing cadets with followership experiences.

AIS 201/202 The Evolution of USAF Air and Space Power (Lecture 1, Leadership Lab* 0)

Aerospace Studies 201/202 is a survey course designed to examine general aspects of the employment of air and space power through a historical perspective. Historical examples assist in understanding the development of Air Force distinctive capabilities and missions. In addition, the students continue discussing the importance of the Air Force Core Values with the use of operational examples and historical Air Force leaders. Students also continue to develop communication skills. Leadership Laboratory is mandatory for AFROTC cadets and complements this course by providing cadets with followership experiences.
AIS 301/302 Air Force Leadership Studies (Lecture 3, Leadership Lab* 0)

Aerospace Studies 301/302 teaches cadets advanced skills and knowledge in management and leadership. Special emphasis is placed on enhancing leadership skills. Case studies are used to examine Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts being studied. A mandatory Leadership Laboratory complements this course by providing advanced leadership experiences in officer-type activities, giving students the opportunity to apply leadership and management principles.

AIS 401/402 National Security Affairs and Preparation for Active Duty (Lecture 3, Leadership Lab* 0)

Aerospace Studies 401/402 is a course designed to examine national security process, regional studies, advanced leadership ethics, and Air Force Doctrine. Special topics of interest focus on the military as a profession, officership, military justice, civilian control of the military, preparation for active duty, and current issues affecting military professionalism with a continuing emphasis on the refinement of communication skills. A mandatory Leadership Laboratory complements this course by providing advanced leadership experiences in officer-type activities, giving students the opportunity to apply leadership and management principles.

MINOR

MINOR IN AEROSPACE STUDIES

- A minor in Aerospace Studies consists of 16 credits.
- You must take all AIS courses listed under the Aerospace Course Listing
- A grade of C- or higher, with an overall GPA of 2.0, is required in each course taken for the minor.

[Aerospace Course Listing]
AFRICANA STUDIES - Dept. Code: AAS
www.as.miami.edu/africanastudies

INTRODUCTION
The Program in Africana Studies (AAS) provides opportunities for students to learn about the experiences of people of African descent in North and South America, the Caribbean and continental Africa. Courses are presently offered leading to a major or minor in Africana Studies. Students are encouraged to pursue these courses, even if they are not majors or minors, in order to achieve a balanced education in keeping with the stated goals of the University of Miami.

EDUCATIONAL OBJECTIVES

a) To help students research, acquire, and disseminate information about the historical and social experiences of Africans and people of African descent on all sides of the Atlantic basin, but with special emphasis on the United States.

b) To facilitate students’ understanding of the multi-cultural, multi-ethnic, globalized society of our time.

c) To help students think critically about the global black experience.

d) To prepare students for graduate work and professional careers.

DEGREE PROGRAMS

Bachelor of Arts

MAJOR

MAJOR IN AFRICANA STUDIES

- A major in Africana Studies consists of 30 credits.
- Twelve of the 30 credits must be completed at the 300 level or above.
- A grade of C- or better with an overall GPA of 2.0 is required in each course taken for the major.
- Africana majors must complete the following core courses: AAS 150, AAS 490, HIS 201, and HIS 209 or HIS 210.
- Africana majors must complete one course in Caribbean Studies (ENG 361, APY 385, GEG 212, HIS 318)
- The remaining courses must be selected from the list of acceptable courses approved by the program, in any school or college within the university.
MINOR

MINOR IN AFRICANA STUDIES

- A minor in Africana Studies consists of 15 credits.
- Africana minors must complete the following courses: AAS 150 and HIS 201 or HIS 209.
- The remaining courses must be selected from the list of acceptable courses approved by the program, in any school or college within the university.
- A grade of C- or higher with an overall GPA of 2.0, is required in each course taken for the minor.
- The remaining courses must be selected from the list of acceptable courses.
- A minimum of six credits must be numbered 300 or higher.

DEPARTMENTAL HONORS

Carter G. Woodson Award - Best all-round student who combines intellectual excellence and community service.

Africana Studies Course Listing
INTRODUCTION

The Program in American Studies at the University of Miami fosters the interdisciplinary study of American culture and society, and explores the place of the United States in an increasingly interconnected world. Our faculty come from a wide range of fields, including history, literature, religion, art, philosophy, law, music, ethnic studies, anthropology, architecture, sociology, communications, and education. What unites them is the commitment to examining the U.S. from multiple perspectives, highlighting the diversity of people, cultures, and experiences that have shaped the past and present United States. The Program places analysis of globalization at its center, and encourages a hemispheric perspective that allows students and faculty to explore interests in the United States, the Caribbean, Latin America, the Pacific Rim, and other border crossings.

EDUCATIONAL OBJECTIVES

The undergraduate curriculum in American Studies encourages students to bridge the divide between disciplines by examining specific themes and topics in an engaging, dynamic, interdisciplinary manner. By exposing students to courses that place questions of cultural diversity, regional difference, ethnic and racial identity, gender and sexuality, class dynamics, and popular culture at the forefront of intellectual investigation, the Program in American Studies enables them to situate their own experiences in a wider context. It also exposes them to a multiplicity of perspectives that inform our understanding of the United States and its place in a global society. The Program strongly encourages its majors to study abroad, and faculty members help students plan their curriculum to make that option feasible.

DEGREE PROGRAMS

Bachelor of Arts

MAJOR

MAJOR in American Studies (30 credits):

A major in American Studies consists of at least 30 credits in American Studies courses (core, co-listed, or cross-listed) with a grade of C- or better in each course, with a cumulative GPA of at least 2.0 in AMS courses. These credits must include at least 18 at the 300 level or above. All majors must complete AMS 101: Introduction to American Studies; AMS 310: The U.S., Transnationalism, and Globalization; at least two other AMS core courses; at least one course in American history, and at least one course in American literature.

Students must take three courses, chosen in consultation with an American Studies advisor, in a specialized area of American Studies (200 level or higher). Students may work in areas including, but not limited to, Ethnic Studies, Caribbean Studies, Latino/a Studies,
Environmental Studies, Communication Studies, Women's Literature, Urban Studies, Africana Studies, Religious Studies, or Material Culture Studies. At least one of these courses must be either comparative or non-U.S.-based.

Students must take courses from at least three different departments in order to fulfill the requirements for the major.

In addition, all majors must complete AMS 501: *Senior Project*. This capstone course can take the form of an individual research project or an internship at a local cultural or civic institution. For the research option, students will identify an appropriate faculty member to supervise and grade the project, and then obtain approval from the program director before proceeding with the project. The student must produce a substantial written report or research paper, the format of which will be determined by the faculty member and student in consultation with the program director. For the internship option, students will partner with any number of local institutions and produce a creative and/or scholarly project for evaluation. The internship will be arranged through the program director, in consultation with the Butler Center. The final product will be evaluated by the program director.

**MINOR**

**MINOR in American Studies (15 credits)**

A minor in American Studies consists of at least 15 credits in American Studies courses (core, co-listed, or cross-listed) with a grade of C- or better in each course, with a cumulative GPA of at least 2.0 in AMS courses. These credits must include at least 9 at the 300 level or above. All minors must complete AMS 101: *Introduction to American Studies*; AMS 310: *The U.S., Transnationalism, and Globalization*; at least one other AMS core course; and at least one course in American history or American literature.

**DEPARTMENTAL HONORS**

American Studies majors with a cumulative GPA of at least 3.5 in AMS courses and an overall GPA of at least 3.0 may earn departmental honors by completing AMS 505: *Honors Thesis*. Candidates for departmental honors are responsible for finding a faculty member to serve as thesis advisor. Students then must complete a thesis proposal of approximately 500 words that must be approved by the thesis advisor and the program director. The format and length of the thesis will vary according to the nature of the project. Students would take AMS 501 in the fall semester of the senior year and AMS 505 in the spring to complete the honors thesis.

[American Studies Course Listing](#)
INTRODUCTION

Anthropology is the scientific study of humankind, from its beginnings to the present. Of the many sciences that study aspects of humans and their behavior, only anthropology attempts to understand and integrate the entire panorama of human biology and culture in all times and places.

The Anthropology Department offers a wide range of courses for students in pursuit of the Bachelor of Arts degree, from the basic four fields of cultural anthropology, linguistics, physical anthropology, and archaeology, to advanced study of topics such as underwater archaeology, medical anthropology, Caribbean cultures, primatology, and Iron Age Europe.

The science of anthropology holds that to understand the principles of human behavior, we must compare our own behaviors with those of people from other times and places around the world. These comparisons demand evolutionary, cross-cultural studies of human behavior, constantly changing, ever intriguing us.

The field is especially suited to a multi-ethnic, multi-lingual, and multi-cultural urban center such as Miami, and the research programs of the department faculty reflect the compositions and concerns of the larger community.

Anthropological knowledge has taken an increasing role in the solution of practical problems in public health, cultural resource management, economic development in the Third World, business relations with immigrant and overseas populations, State and Federal programs, and many other areas. Anthropology majors may become professionals in the field by continuing their training in one of the many excellent graduate programs around the country.

EDUCATIONAL OBJECTIVES

Students who graduate from our program in anthropology will have achieved:

1) Basic familiarity with each of the four subfields of our discipline: archaeology, cultural anthropology, linguistic anthropology, and physical or biological anthropology.

2) Extended familiarity with one or more of these subfields in terms of knowledge of content, e.g. area ethnology in Latin America and/or the Caribbean, topical knowledge such as Drugs and Culture, Ritual and Sacrifice, Sex and Culture, Food, Primate Behavior, Iron Age Civilizations, or World Languages, or methodological skills involving field research in one or more of the subfields.

3) The ability to articulate the anthropological view of the human condition in terms of an operational definition of culture and a holistic perspective on how humans behave.

4) Sufficient skill in research to be able to produce a research paper on an anthropological topic.
DEGREE PROGRAMS

The Department of Anthropology offers a major and a minor in the University’s array of Bachelor of Arts Degrees.

MAJOR

- A major in Anthropology consists of 30 credits in Anthropology, passed with a grade of C- or higher with an overall GPA of 2.0.
- APY 201, 202, 203, 204 (or approved alternatives), and a minimum of four anthropology courses at the 300 level or higher are required. APY 208 may count as one of the six courses taken in addition to the four basic courses.
- The remainder of the program will be developed with the student’s departmental advisor.

MINOR

A minor in Anthropology consists of 15 or more credits, passed with a grade of C- or higher with an overall GPA of 2.0 including any two 200-level anthropology courses.

Any two of the following courses in other departments may be applied to the major in Anthropology; any one to the minor:

ARH 332
MCY 554
COS 545
MAF 526
MAF 501 or MAF 505.

Please check with the Anthropology department for any updates to the above list.

DEPARTMENTAL HONORS

A student with a cumulative grade point average of 3.5 or higher may earn honors in anthropology by writing a qualifying thesis paper under the direction of a member of the faculty in the Department of Anthropology.

Anthropology Course Listing
ART AND ART HISTORY - Dept. Codes: ART, ARH
www.as.miami.edu/art

EDUCATIONAL OBJECTIVES

The Department of Art and Art History provides facilities and instruction to serve equally the needs of the general student for participation in and appreciation of the visual arts and those of students with specialized interests and abilities preparing for careers in the production, teaching, utilization, and interpretation of Art and Art History.

DEGREE PROGRAMS

The Department of Art and Art History offers two degrees: the Bachelor of Arts with tracks in Art History, General Study and Studio Art and the Bachelor of Fine Arts with specializations in Painting, Sculpture, Printmaking, Photography/Digital Imaging, Graphic Design/Multimedia and Ceramics. The B.A. requires a minimum of 36 credit hours in the department with a grade of C or higher. The B. A. major is also required to have a minor outside the department. Minor requirements are specified by each department and are listed in the Bulletin. The B.F.A. requires a minimum of 72 credit hours in the department, a grade of C or higher in each course, a successful portfolio review, and at least a 3.0 average in departmental courses. The B.F.A. major is not required to have a minor outside the department.

MAJOR

DEGREE REQUIREMENTS

BACHELOR OF ARTS - ART HISTORY

Foundation Courses: 6 Credits
Any two ART courses

Art History Foundation Courses: 6 credits
ARH 131. Survey of Western Art I and
ARH 132. Survey of Western Art II

Area of Study: 24 credits
Art History: seven courses from 200 level or higher, plus one art history seminar course

Total: 36 credits

BACHELOR OF ARTS - GENERAL STUDY

Foundation Courses: 6 credits
ART 101. Introduction to Drawing I and
ART 109. Introduction to Electronic Media
Art History Courses: 9 credits
ARH 131. Survey of Western Art I AND
ARH 132. Survey of Western Art II
One course from 100, 200, or 300 level

General Study Courses: 21 credits
Any seven courses from the following areas:
Art History
Drawing
Painting
Sculpture
Printmaking
Graphic Design/Multimedia
Photography/Digital Imaging
Ceramics/Glass

Total: 36 credits

BACHELOR OF ARTS STUDIO ART

Foundation Courses: 6 credits
ART 101. Introduction to Drawing I and
ART 109. Introduction to Electronic Media

Art History Courses: 9 credits
ARH 131. Survey of Western Art I AND
ARH 132. Survey of Western Art II
One additional course at the 100, 200, or 300 level

Studio Art Courses: 21 credits
Seven Studio courses from the following areas:
Drawing
Painting
Sculpture
Printmaking
Graphic Design/Multimedia
Photography/Digital Imaging
Ceramics/Glass

Total: 36 credits

BACHELOR OF FINE ARTS

PORTFOLIO REVIEW
All students who anticipate graduating with a Bachelor of Fine Arts (BFA) degree must submit a portfolio consisting of 15-20 images of their work on either a CD/DVD or in slides for review by the faculty. Students can apply as incoming freshmen or anytime within their first years. NO STUDENT IS OFFICIALLY CONSIDERED A BFA CANDIDATE UNTIL THE PORTFOLIO IS APPROVED BY THE FACULTY. If the BFA portfolio is not submitted at the proper time or fails to be passed by the faculty, the student will be advised and registered as a Bachelor of Arts (BA) candidate.

BFA EXHIBITION
Unless otherwise instructed, each BFA candidate will take part in an exhibition of work screened and approved by a faculty member from their area of specialization, accomplished
as an art major at the University of Miami, in the Fall or Spring semester of the senior year. The BFA exhibitions are held in the College Gallery.

At the time the candidates BFA exhibition is hung, a formal critique will be arranged between the student and the art faculty.

**BFA COURSE REQUIREMENTS**

**General Foundation Courses:**
- ART 101. Introduction to Drawing I and ART 109. Introduction to Electronic Media  
  **6 credits**

**Art History Courses:**
- ARH 131. Survey of Western Art I AND ARH 132. Survey of Western Art II  
- ARH 343. Modern Art or ARH 344. Contemporary Art  
- Two courses from 100, 200, or 300 level  
  **15 Credits**

Note: ARH 346 - History of Graphic Design is required for Graphic Design/Multimedia majors. ARH 107 – History of Photography is required for Photography majors.

**Art Electives:**
- 12 Credits to be taken in the Department outside of area of specialization.  
  **12 Credits**

**Areas of Concentration (one entire sequence required):**

**Primary** concentrations can be taken in Painting, Printmaking, Graphics-Multimedia, Photo Digital, Ceramics and Sculpture.

**Secondary and Tertiary** concentrations can be taken in Painting, Printmaking, Graphics-Multimedia, Photo Digital, Ceramics, Sculpture, Introductory Art Studio (ART 102, 103, 104, 108), and Drawing (ART 102, 105, 107, 305).

**TOTAL: 72 Credits**

**BFA Minor in Art History**
All BFA studio majors automatically minor in art history. A minor outside the department is not required.

**BFA Double Specialization**
Double Specialization requires the completion of an entire sequence in a second area of specialization.

A BFA student is limited to a maximum of 21 credits in any one studio area – Painting, Printmaking, Graphics-Multimedia, Photo Digital, Ceramics, Sculpture. **Courses beyond the 21 credit primary concentration limit will not be counted toward graduation.**

A student may not exceed the required 72 credits within the Department of Art and Art History.

Students must maintain at least a 3.0 average in their major.
MINOR

A minor in Art and Art History consists of 15 credits (6 of which must be from the University of Miami) in departmental courses passed with a C or higher.

DEPARTMENTAL HONORS

Admission
Admission is by invitation from the Department Chair. Students are invited the first semester of their junior year and are required to complete the program before their date of graduation.

Requirements
Studio Art Majors - Students must have passed the B.F.A. Portfolio Review and have a GPA of 3.5 or higher in the Art major.

Art History Majors - Students must be a declared Art History major, and have a GPA of 3.5 or higher in the Art History major.

Students must complete a minimum of six credit hours in designated honors courses (ART 499 or ARH 499) with a grade of B or higher.

Students must have an overall GPA of 3.3 or higher.

Students must submit the results of their honors study for approval to a Departmental Honors Committee.

ART SCHOLARSHIPS
Partial tuition scholarships are awarded on the basis of artistic ability and academic achievement. Students must be accepted for admission to the University of Miami in order to apply for an Art Scholarship. The deadline for submission of materials is March 1.

AUDIT
Due to the nature of studio courses, it is not possible for a student to audit courses offered in the studio areas.

Art and Art History Course Listing
ASTRONOMY

For courses in Astronomy see PHYSICS, in particular PHY 110 and 545.
INTRODUCTION

Biochemistry is the chemistry of life. It includes or has large areas of overlap with molecular biology, biophysics, structural biology, cell biology, metabolism, neuroscience, nutrition, genetics, etc. It tries to explain what happens in living organisms and how biological processes are regulated. It is a relatively young science. Our understanding is still developing and students (and faculty) can learn something that is totally new every day. An Undergraduate Major in one of our two tracks, Biochemistry and Molecular Biology or Biochemistry and Nutrition, provides an excellent preparation for:

1. Medical School

2. Graduate Studies in all basic medical sciences:
   - Biochemistry
   - Molecular Biology
   - Cell Biology
   - Genetics
   - Neurobiology
   - Microbiology
   - Immunology
   - Pharmacology
   - Biophysics
   - Physiology
   - Bio-informatics
   - Biology
   - Nutrition
   - Environmental Science
   and others

3. Industry
   - Biotechnology
   - Pharmaceutical
   - Food Production
   - Food processing

4. Patent Law

5. Allied Health Professions
   - Nutrition
   - Dentistry
   - Forensics
   - Veterinary Medicine
   - Toxicology
   - Clinical Chemistry
   - Environmental Science

6. Non-Health Professions
   - Chemistry
   - Physics
   - Scientific Publishing

INTERESTING ARTICLES


EDUCATIONAL OBJECTIVES

The Department of Biochemistry and Molecular Biology intends to provide its students with the best possible opportunities to master the subject and become independent learners.
DEGREE PROGRAMS

The Department of Biochemistry and Molecular Biology offers an undergraduate B.S. degree as a member of the College of Arts & Sciences. It also offers the following graduate degrees: Ph.D. and combined M.D. and Ph.D. It offers a Molecular Medicine Pathway for medical students.

MAJOR

A major in Biochemistry and Molecular Biology leading to a Bachelor of Science degree requires a thorough foundation in chemistry and biology or microbiology and good background knowledge of physics and mathematics. Students can select one of the two following tracks.

Track 1: Biochemistry & Molecular Biology

Minimum requirements:

1. 15 credits from the courses offered by the Department of Biochemistry and Molecular Biology plus at least 16 credits in chemistry and at least 19 credits in biology. Examples of courses that can be taken for this track of the major are BMB 151, 245, 251, 260, 501, 506, 507, 509, 511 and 545. Courses printed in bold letters are absolutely required. Courses printed in italics can be taken more than once. Only in exceptional cases will BMB 401 be accepted in place of BMB 506. Students are encouraged to take at least one semester of BMB 545 (laboratory research). The Department will make its own independent determination on a case-by-case basis concerning the equivalency of courses taken at other universities.

A UM cumulative grade point average of 2.9 is required to declare a biochemistry major or minor. Transfer students can only declare a biochemistry major if they have a grade point average of 3.5. A grade of C or better must be earned in each Biochemistry and Molecular Biology course.

2. Required Biology and/or Microbiology courses are:
   BIL 150, 151, 160, 250, 252 or 256 or 251 (252 is preferred), 255 plus BIL 355 (Developmental Biology) or MIC 301. All the 200-level courses should be completed during the first five semesters.

3. Required Chemistry courses are CHM 111/113, 112/114, 201/205, and 202/206. These courses should be completed before the end of the sophomore year. Chemistry 304 and /or 331 are recommended.

4. Mathematics: MTH 161 and 162 or 171 and 172.

5. Physics:
   For students contemplating graduate studies: PHY 201 or 205, 202 or 206 and 207 plus laboratories or PHY 205 and 210 plus 2 physics laboratory classes. For students not contemplating graduate studies: PHY 101 and 102 plus labs are acceptable.
Track 2: Biochemistry & Nutrition

Minimum requirements:

1. 15 credits from the courses offered by the Department of Biochemistry and Molecular Biology plus at least 16 credits in chemistry and at least 19 credits in biology. Examples of courses that can be taken for this track of the major are BMB 151, 245, 251, 260, 506, 4XX (Nutrition), 501, 5XX (Nutrigenetics), 5YY (Applied Nutrition), 511 and 545. Courses printed in bold letters are absolutely required. Courses printed in italics can be taken more than once. Only in exceptional cases will BMB 401 be accepted in place of BMB 506. Students are encouraged to take at least one semester of BMB 545 (laboratory research). The Department will make its own independent determination on a case-by-case basis concerning the equivalency of courses taken at other universities.

A UM cumulative grade point average of 2.9 is required to declare a biochemistry major or minor. Transfer students can only declare a biochemistry major if they have a grade point average of 3.5. A grade of C or better must be earned in each Biochemistry and Molecular Biology course.

2. Required Biology and/or Microbiology courses are:
   BIL 150, 151, 160, 250, 252 or 256 or 251, 255 plus MIC 301.
   All the 200-level courses should be completed during the first five semesters.

3. Required Chemistry courses are CHM 111/113, 112/114, 201/205, and 202/206. These courses should be completed before the end of the sophomore year. Chemistry 304 and /or 331 are recommended.

4. Mathematics: MTH 161 and 162 or 171 and 172.

5. Physics:
   For students contemplating graduate studies: PHY 201 or 205, 202 or 206 and 207 plus laboratories or PHY 205 and 210 plus 2 physics laboratory classes. For students not contemplating graduate studies: PHY 101 and 102 plus labs are acceptable.

Variations of the above program are feasible for students entering with advanced standing on the basis of placement tests or for transfer students but only with the express permission of the biochemistry advisor.

Dual Degree Honors Program

The Honors Program in Biochemistry & Molecular Biology (HPBMB) is offered to mature high school seniors with strong academic ability and achievement who seek careers in biological or biomedical science. Students can earn both a Bachelor of Science (BS) and a Doctor of Philosophy Degree (PhD) in approximately 6 years. For information see http://www.miami.edu/admission/index.php/undergraduate_admission/academics/dual_degree_honors/
MINOR

Minimum requirements are:

1. 9 credits in the Biochemistry and Molecular Biology track or 9 credits in the Biochemistry and Nutrition track. BMB 506 is required. Students must have all the courses that are a prerequisite for BMB 506 and a good working knowledge of chemistry and biology before they take BMB 506. The remaining credits may come from any of the courses offered by the Department. Only in exceptional cases will BMB 401 be accepted in place of BMB 506 with the permission of the undergraduate advisor. Students should become familiar with the credit sharing rules. Credits for a minor cannot be used for a major. Credits can be shared between two majors.

2. The Department will make its own independent determination on a case-by-case basis concerning the equivalency of courses taken at other universities. A grade of C or better must be earned in each Biochemistry and Molecular Biology course.

For graduate programs or combined Ph.D.-M.D. programs, consult the Bulletin of the Graduate School.

Registration in all 500-level courses requires permission from the Biochemistry advisor or course coordinator.

DEPARTMENTAL HONORS

Departmental honors can be earned by biochemistry majors who have:

1. successfully completed two semesters of research (5 or 6 credits of BMB 545). This research must be described in a brief thesis that needs to be approved by three BMB faculty members.

2. a 3.5 or higher grade point average in all BMB courses.

3. at least a 3.3 average for all their courses taken at the University of Miami.

For general honors see elsewhere in this Bulletin.

Biochemistry and Molecular Biology Course Listing
INTRODUCTION

The Department of Biology offers undergraduate programs for students interested in a natural science education that will prepare them for careers in biological research, medicine and other health-related fields, teaching, environmental management and other fields that require a broad base of biological knowledge.

EDUCATIONAL OBJECTIVES

The Department of Biology trains students to understand and use the scientific method, and to engage in critical thinking and experimental design. We strongly encourage original laboratory and/or field research under the mentorship of biology faculty. The Bachelor of Science in Biology prepares the student for further training in natural science, such as biology graduate school, as well as medical, veterinary, dental or other health-care professions. The Bachelor of Arts degree prepares the student for a career in more humanities-related fields such as teaching or environmental law.

DEGREE PROGRAMS

Two undergraduate degrees are available in Biology: the B.S. and B.A.
Both require a major in Biology of 34 credits with a minimum grade of C- in each course and an overall GPA of 2.0.

MAJOR

Bachelor of Science Degree

The B.S. degree is recommended in preparation for graduate schools, professional schools, marine biology, and high school or college teaching. In addition to the College of Arts and Sciences general degree requirements, the B.S. requirements are as follows:

1. BIL 150, 151, 160, 161
2. BIL 250 (Genetics) and BIL 255 (Cellular and Molecular Biology)
3. BIL 360 (General Physiology) and BIL 330 (Ecology)
4. Additional BIL electives to total 34 credits.
5. Two laboratory or field courses beyond 151, 161 are required as part of the 34 credits in BIL.

Up to eight credits toward the major, but not the minor, may be selected from the following: (1) courses numbered 300 or higher in BMB, MBF or MIC, (2) BME 305, (3) CSC 548.

- A maximum of two credits of BIL 371 and BIL 372 may be applied towards the major.
- A maximum of six credits of BIL 495, 496 and 497 may be applied towards the major.
• One course only from BIL 495, 496 or 497 may be counted towards the laboratory course requirement for the B.S. degree.
• A maximum of one credit in BIL 381 and one credit of BIL 382 may be applied towards the major, although these two courses may be taken more than once each for general elective credit.
• A maximum of one credit in BIL 481 under any single subtitle may be applied towards the major. This course may be taken more than once for general elective credit only.

In addition, students must complete the following:

1. Select one statistics course from the following: BIL 311, BIL 511, ECS 204, IEN 311, MTH 224, or PSY 204 OR one computer language/programming course from the following: CSC 120, EEN 118. This will fulfill the Mathematics-statistics/computer programming requirement under the College of Arts and Sciences General degree requirements.

2. One year of inorganic chemistry (111-112) with laboratory (113-114) (first year) one semester of organic chemistry with laboratory (201/205) (second year).

3. Two semesters of college physics with laboratory or three semesters of university physics with laboratory.

4. A minor in chemistry, ecosystem science and policy, physics, geological sciences, marine sciences, biochemistry and molecular biology, computer science, mathematics, or microbiology and immunology.

**Bachelor of Arts Degree**

The B.A. degree is recommended for students involved in interdisciplinary programs and for entrance to those professional schools and specific biological careers not requiring a B.S. degree with a major in Biology. In addition to the College of Arts and Sciences degree requirements, the B.A. requirements are as follows:

1. Biology 150, 151, 160, 161 (first year)

2. BIL electives to total 34 credits.

3. Up to eight credits toward the major, but not the minor, may be selected from the following: (1) courses numbered 300 or higher in BMB, MBF or MIC, (2) BME 305, (3) CSC 548.

4. One semester of inorganic chemistry with laboratory (111/113 or 103/105) and one semester of organic chemistry with laboratory (201/205 or 104/106).

5. A minor in a department other than natural science.
MINOR

A biology minor consists of BIL 150/151 and BIL 160/161 plus BIL electives to total 18 credits, with a minimum grade of C- in each course. (Note: All courses in the minor must be in BIL. Courses from BMB, MBF, MIC, or BME, or other natural sciences approved as a substitute for one BIL elective in the major may not be counted towards the minor.) Overall GPA in the major or minor must be a minimum of 2.0.

One half of the credits required for a Biology major or minor must be earned in residence at the University of Miami.

DEPARTMENTAL HONORS

HONORS PROGRAM

See HONORS PROGRAMS elsewhere in this Bulletin for minimal requirements. In addition to the grade point averages specified in the minimal requirements, the following program constitutes the Biology Departmental Honors Program:

1. A minimum of two of the following: Biology 495, 496, 497 (2 credits each), involving a research project carried out under the supervision of a member of the Department of Biology faculty.

2. Biology 498, a senior thesis, of superior quality, on the results of the research.


4. A minimum of two BIL credits from the following list: 253, 257, 299, 374, 375.

5. A minimum of one course in the Department of Biology at the 500 level.

6. An overall GPA of 3.3 and a biology GPA of 3.5.

Advanced placement, and in certain situations, course credit can be earned through the College Entrance Examination Board program, placement examinations, and departmental proficiency examinations.

For Graduate programs, consult the Graduate School section of this Bulletin.

Variations within the above program may be permitted by the Department Chairman in special cases.

Biology Course Listing
INTRODUCTION

Each undergraduate chemistry degree program requires the core courses CHM 111, 112, 113, 114, 201, 202, 205, 206, and 304; one year of calculus; and at least two semesters of physics. The requirements for a major are flexible and should conform to the objectives of the student. A grade of C- or higher must be earned in all courses taken for major or minor credit, and the Chemistry GPA must be 2.00 or higher. Credits earned in CHM 381 and CHM 382 do not count toward the major or minor.

EDUCATIONAL OBJECTIVES

The mission of the Bachelor's degree program in the Chemistry Department is to promote an understanding and appreciation of the role of chemistry in modern society, especially as it relates to and integrates with other biological and physical sciences and societal issues facing humanity today such as the environment, health issues and technological advances.

DEGREE PROGRAMS

Three programs lead to degrees with a chemistry major:

1. the B.A. degree
2. the B.S. degree
3. the B.S. degree with certification by the American Chemical Society Committee for Professional Training of Chemists.

MAJOR

1. The B.A. degree requires 27 credits of chemistry: the core courses; CHM 331 or 360; plus electives from the following sufficient to reach the required credit hours for the degree: CHM 316, 320, 365, CHM 401, CHM 531, 520 or BMB 401. This major is designed for premedical students, high school science teachers, and others who choose a non-science minor. It may be combined with business courses in an interdisciplinary program.

2. The B.S. degree requires 34 credits of chemistry: the core courses; CHM 360, 364, 365 and 316, 320; plus electives from the following sufficient to reach the required credit hours for the degree: CHM 401, CHM 441, 520, 563 or BMB 401 or 506. Two semesters of physics are required. This major meets the minimum entrance requirements of many graduate programs in chemistry.

3. The American Chemical Society certified B.S. degree consists of 44 credits: the core courses; 316, 320, 360, 364, 365, 441, 442, 464, BMB 506; CHM 520, and 563; at least two credits in CHM 488 or 490; either PHY 205/210; or PHY 205, 206, and 207; and both PHY 208 and 209. The Professional Chemistry Program is also available in the Engineering Science Department, College of Engineering. A senior research thesis is required by the ACS for awarding of this degree.
Variations within the above programs may be recommended by the Department. Transfer students must complete a minimum of half of the required major credits in residence in the Department. Students should make certain that math and physics prerequisites are fulfilled in a timely manner. For students who plan to do graduate work in physical chemistry, a double minor is recommended: Mathematics and Computer Science through 310 and 311, Physics through 350 and 360.

**MINOR**

A minor in chemistry consists of 8 credits in chemistry courses at the 200 level or above, taken at the University of Miami, exclusive of CHM 381, 382, 488 and 490.

Credit may be earned in only one of the courses Chemistry 103, 111 or 151. Credit may not be earned in both CHM 104 and CHM 201.

**DEPARTMENTAL HONORS**

Honors in Chemistry may be earned by students who are in good standing within the University’s Honors Program. In addition to the general requirements for University Honors, a student must also complete the core courses in Chemistry; CHM 360, 364, and 365; at least six credits of CHM 490; and any three of the following: CHM 316, 441, 520, 563, BMB 502, and BMB 401 or 506, all with an average grade of at least 3.30. A written Honors Thesis and oral defense on the subject of the Honors Research must be presented by the student and approved by a Department Honors Committee.

[Chemistry Course Listing]
INTRODUCTION

Every culture and civilization has its classics: those works of art that are seen as the best of their kind, have withstood the test of time, and embody the symbolic values of their society. In the western tradition, the study of 'Classics' has focused upon the literatures and cultures of ancient Greece and Rome, and their impact on the whole subsequent history of the western world.

The significance of the study of Classics to the history of the academy would be difficult to overstate. Indeed the entire notion of a 'university,' from the days of mediaeval Paris, Bologna, Oxford, and Heidelberg on, was founded consciously and explicitly upon the study of Greek and Latin literatures and thought. The discipline has been conceived in unusually broad terms; it is intended to encompass everything that can be known about the ancient Mediterranean world. Because of this, there is room in Classics for the study of areas as disparate as literature, science, sculpture, history, architecture, religion, philosophy, theater, economics, music -- in short, the entire panorama of human endeavor. It is no wonder that the study of Classics has always tended to attract some of the liveliest and most brilliant intellects; and it is equally unsurprising that students majoring in Classics find themselves extremely well-prepared for undertaking practically any type of career, whether that be in politics, law, teaching, commercial publishing, research of all kinds, medicine, journalism, banking, or the corporate world. A degree in Classics marks the UM graduate as a man or woman of superior analytical and critical skills, one who has proved able to cope with the most rigorous academic curriculum, and who is exceptionally broadly educated in the most fundamental aspects of what it means to be human.

EDUCATIONAL OBJECTIVES

The educational objectives of the Department of Classics may be stated in a variety of ways, and on a number of levels. In terms of linguistic competency, students majoring or minoring in Classics are required to reach an appropriate level of fluency in reading ancient Greek or Latin, or both. In terms of cultural literacy, students of the Classics are educated within a rigorous curriculum exposing them to the great literary works and material cultures of ancient Greece and Rome. In terms of critical thinking, students of the Classics are trained to hone the skills of memory, analysis, and synthesis, skills that they will be able to apply for the rest of their lives in any realm of thought whatsoever.

But -- stated in the most philosophical terms -- the goal of an education in Classics is to foster and inculcate an ever-burgeoning awareness of what Cicero referred to as *humanitas* -- in short, everything it is to be human. It is the mission of Classics to expose its students to the greatest thoughts and endeavors of the human race, and to encourage them to think about what that greatness consists in, and how to enlarge upon it. The profoundest educational objective of the Department of Classics is to preserve and study all that is important or beautiful about the past, in order best to prepare for the future.
DEGREE PROGRAMS

The Department of Classics offers the Major and the Minor in Classics; for details on these, see below.

MAJOR

The undergraduate Major in Classics at UM has four possible tracks. The requirements for each of these are as follows:

Track 1: Greek (30 credits)
GRE 101, 102, 201
Five further courses in Greek (GRE 202 and above)
Two Classics-in-translation (CLA) courses

Track 2: Latin (30 credits)
LAT 101, 102, 201
Five further courses in Latin (LAT 202 and above)
Two Classics-in-translation (CLA) courses

Track 3: Latin and Greek (36 credits)
LAT 101, 102, 201 and GRE 101, 102, 201
Two further courses in Latin (LAT 202 and above) and two further courses in Greek (GRE 202 and above)
Two Classics-in-translation (CLA) courses

Track 4: Classical Civilization (30 credits)
LAT 101, 102, 201 or GRE 101, 102, 201
One further course (202 and above) in either Latin (LAT) or Greek (GRE)
Six Classics-in-translation (CLA) courses

MINOR

Students may instead elect to Minor in Classics at UM. The requirements for this are as follows;

Minor in Classics (five courses -- 15 credits). Courses that qualify for the minor in Classics are taught each semester. A grade of C-minus or better is required in each course taken for the minor, as well as an overall GPA of 2.0 or higher.

3 credits in a Greek (GRE) course or 3 credits in a Latin (LAT) course
12 credits in Greek (GRE), Latin (LAT), or Classics-in-translation (CLA) courses (in any combination desired)
GENERAL EDUCATION RUBRICS

Courses in Classics labeled 'LAT' or 'GRE' and above the 201 level -- that is, LAT 202, GRE 202, and higher -- satisfy General-Education requirements under the 'Literature' requirement of the 'Humanities' rubric.

Some courses in Classics labeled CLA satisfy General-Education requirements under the 'Literature' requirement, while others do so under the 'People and Society' requirement. These are as follows:

**LITERATURE**
- CLA 220 Greek and Roman Mythology
- CLA 223 The Ancient World on Screen
- CLA 224 The Heroic Journey
- CLA 246 Classical Rhetorical Theory
- CLA 310 Survey of Ancient Greek Literature and Culture
- CLA 311 Survey of Classical Latin Literature and Culture
- CLA 315 The Classical Epic Tradition
- CLA 340 Greek Tragedy

**PEOPLE & SOCIETY**
- CLA 221 Sports & Society in the Ancient World
- CLA 222 Sexuality and Gender in the Ancient World
- CLA 232 Ancient Law
- CLA 233 Ancient Medicine
- CLA 241 Greek Civilization
- CLA 242 Roman Civilization
- CLA 301 Ancient Greece
- CLA 302 The Hellenistic Age
- CLA 303 The Roman Republic
- CLA 304 The Roman Empire
- CLA 323 The Ancient World on Screen
- CLA 325 The Vampire in Folklore, Fiction, and Film
- CLA 370 Self and Other in the Ancient World

**DEPARTMENTAL HONORS**

Some Classics Majors may qualify to graduate with Departmental Honors in Classics. In order to earn Departmental Honors, the student must maintain a minimum average of 3.5 in all Classics courses (those labeled CLA, GRE, and LAT), plus an overall minimum GPA of 3.5. In addition, they must complete CLA 495 and CLA 496 with a grade of B or higher.

In addition, Classics Majors, Classics Minors, and other students who meet certain academic criteria are eligible for membership in Eta Sigma Phi, the National Honors Society for Classics.

[Classics Course Listing](#)
COMPUTER SCIENCE - Dept. Code: CSC
www.cs.miami.edu

INTRODUCTION
The Department of Computer Science offers undergraduate and graduate education in Computer Science, and performs research in various areas of Computer Science. The Department has faculty with strong accomplishments in the fields of algorithm engineering, automated reasoning, bioinformatics, computational complexity, computational geometry & computer graphics, cryptography & network security, data mining, molecular computation, multimedia systems, music information retrieval, scientific computing, and wireless & mobile computing.

EDUCATIONAL OBJECTIVES
The Department of Computer Science educates students in the science of software development: the analysis of domain problems, the development of algorithms and programs, the use of specialist computing techniques, the system-software and hardware platforms, and the production and deployment of efficient and robust computer software. Instruction ranges from introductory programming classes and laboratories, through to research in various areas of computer science.

DEGREE PROGRAMS
The Department of Computer Science offers a Bachelor of Science and a Bachelor of Arts, major in Computer Science. A 5-year Bachelor of Science + Master of Science program is also available.

MAJORS

Bachelor of Science in Computer Science for students in the College of Arts and Sciences

Students must complete the Core, a Track, and the Science & Ethics requirements.

Core

Computer Science (20 credits)

- CSC 120 - Computer Programming I
- CSC 220 - Computer Programming II
- CSC 314 - Computer Organization and Architecture
- CSC 517 - Data Structures and Algorithm Analysis
- CSC 527 - Theory of Computing
- CSC 531 - Introduction to Software Engineering
Mathematics (17 Credits)

- MTH 161 - Calculus I (or equivalent - MTH 140 and MTH 141, MTH 151, or MTH 171)
- MTH 162 - Calculus II (or equivalent - MTH 172)
- MTH 210 - Introduction to Linear Algebra
- MTH 224 - Introduction to Probability and Statistics
- MTH 309 - Discrete Mathematics I

Comprehensive Track (Available to all students)

- CSC 519 - Program Languages
- CSC 521 - Principles of Computer Operating Systems
- CSC 523 - Database Systems
- CSC 524 - Computer Networks
- At least 8 credits of approved electives

The Comprehensive Track provides coverage of the topics in Computer Science prescribed by the Association of Computing Machinery curriculum and the ABET Computing Accreditation Commission.

Flexible Track (Available to all students)

- At least 20 credits of approved electives

Computational Science Track

(Requires permission of the Director of Undergraduate Studies)

- CSC 210 - Computing for Scientists
- CSC 528 - Introduction to Parallel Computing
- CSC 547 - Computational Geometry
- CSC 548 Bioinformatics Algorithms
- 2 credits from CSC 410 - Computer Science Project Planning-CSC 411 - Computer Science Project Implementation
- MTH 311 - Ordinary Differential Equations or
MTH 515 - Ordinary Differential Equations
- MTH 320 - Introduction to Numerical Analysis or
MTH 520 - Numerical Analysis I
- The courses used to meet the Science requirement must include either
  - BIL150 - General Biology
  - BIL151 - General Biology Laboratory

Cryptography and Security Track

(Requires permission of the Director of Undergraduate Studies)

- CSC 507 - Data Security and Cryptography
- CSC 521 - Principles of Computer Operating Systems
- CSC 524 - Computer Networks
- 3 credits from CSC 410 - Computer Science Project Planning - CSC 411 - Computer Science Project Implementation
- MTH 505 - Theory of Numbers or
MTH 528 - Combinatorics or
MTH 561 – Abstract Algebra I or
- At least 5 credits of approved electives

Graphics and Games Track

(Requires permission of the Director of Undergraduate Studies)

- CSC 329 - Introduction to Game Programming
- CSC 529 - Introduction to Computer Graphics
- CSC 545 - Introduction to Artificial Intelligence
- 3 credits from CSC 410 - Computer Science Project Planning - CSC 411 - Computer Science Project Implementation
- At least 8 credits of approved electives. In addition to the generally approved electives, the following are approved for the Graphics and Games track:
  - EEN 596 – Maya Animation
  - MMI 504 - Audio Analysis & Synthesis
  - MMI 505 - Advanced Audio Signal Processing
- The courses used to meet the Science requirement must include either
  - PHY 101 - College Physics I or
  - PHY 205 - University Physics I

Science & Ethics Requirement

The Computer Science major requires 13 credits of Science. The Science courses must include an approved two semester sequence of courses with laboratory. Courses may be taken in Biology, Chemistry, Environmental Science, Geological Science, Marine Science, Physics, and Physical Science. The Science courses must be acceptable for the Natural Science requirements in the College of Arts and Sciences, for Bachelor of Science students. The Computer Science major requires completion of the Ethics course PHI 115. This course is acceptable for the Arts & Humanities requirements of the College of Arts and Sciences.

Approved Electives

- Any CSC 2XX, CSC 3XX, CSC 4XX, CSC 5XX (maximally 6 credits from CSC 40X - Computer Science Practicum, and maximally 6 credits from CSC481 - Undergraduate Teaching Assistant Training in Computer Science)
- CIS 360 - Analysis of Information Systems
- CIS 465 - Applied Software Project Development (instead of CSC410/CSC411)
- EEN 414 - Computer Organization and Design
- EEN 417 - Embedded Microprocessor System Design
- EEN 514 - Computer Architecture
- EEN 532 - VLSI Systems
- EEN 542 - Digital Integrated Circuits
- EEN 574 - Agent Technology
- EEN 577 - Data Mining
- MTH 320 - Introduction to Numerical Analysis
- MTH 509 - Discrete Mathematics II
- MTH 520 - Numerical Analysis I
- MTH 521 - Numerical Analysis II
- MTH 524 - Introduction to Probability Theory
- MTH 525 - Introduction to Mathematical Statistics
- MTH 528 - Combinatorics
Bachelor of Science in Computer Science for students with a Second Major in Science, in the College of Arts and Sciences

Bachelor of Arts in Computer Science for students in the College of Arts and Sciences

Students must complete the Core and Electives.

Core

Computer Science (20 credits)
- CSC 119 - Computers and Society or
  - 3 credits from CSC 2XX, CSC 3XX, CSC 4XX, CSC 5XX or
  - CIS 320 – Introduction to Programming or
  - CVJ 341 – Web Production or GEG 199 – Introduction to GIS or
  - MTH 161 - Calculus I (or equivalent - MTH 140 and MTH 141, MTH 151, or MTH 171)
- MTH 309 - Discrete Mathematics

Electives

6 approved credits from
- Any CSC 2XX, CSC 3XX, CSC 4XX, CSC 5XX
- BIL 552 - Bioinformatics Tools
- CIS 360 - Analysis of Information Systems and
- CIS 423 - Database Management Systems
- CIS 430 - Business Telecommunications
- CIS 465 - Applied Software Project Development (instead of CSC410/CSC411)
- EEN 414 - Computer Organization and Design
- EEN 514 - Computer Architecture
- EEN 368 - Internet Computing I and
  - EEN 568 - Internet Computing II or EEN 576 - Internet and Intranet Security
- EEN 567 - Database Design and Management and
  - EEN 577 - Data Mining
- MMI505 - Musician-Machine Interfaces (for Music Engineering students only)
5-year Bachelor of Science + Master of Science in Computer Science

The 5-year Bachelor of Science + Master of Science program in Computer Science provides research training for students who wish to work in a computing research lab, or possibly continue to PhD studies.

Students must complete the requirements for a Bachelor of Science in Computer Science, and the requirements for a 30 credit Master of Science in Computer Science with thesis. No credits may be counted towards both requirements.

Students enter the "MS-phase" of the program when they have met the following requirements:

- They have achieved senior status, i.e., earned 89 credits towards their Bachelor of Science in Computer Science.
- Within the requirements for a Bachelor of Science in Computer Science, they have completed the prerequisites for entry into the regular Master of Science program, i.e., CSC120, CSC220, CSC314, CSC517, CSC527, MTH161, MTH224, and MTH309.
- They have completed 3 credits of CSC410/1 in a research-oriented project.
- They have a GPA of at least 3.0 in the CSC courses taken towards their BS in Computer Science.
- They have advised the Director of Graduate Studies of their eligibility for the MS-phase.

Students in the MS-phase must complete 3 further credits of CSC410/1 in a research-oriented project, as part of their Bachelor of Science in Computer Science (this project will normally be the starting point for the Master of Science research). Students in the MS-phase may take 600 level courses that count towards completing the requirements for the Master of Science in Computer Science. When students have completed the requirements for a Bachelor of Science in Computer Science they will be awarded that degree, and when they have completed the requirements for the Master of Science in Computer Science they will be awarded that degree. Students in the MS-phase must submit their GRE scores before they are admitted to graduate student status.

 Incoming students can be admitted to the program if their mathematics placement is MTH108 or higher. Existing Bachelor of Science in Computer Science students can switch into the program when they have met the requirements for entering the MS-phase of the program. Students can be removed from the program if they have not met the prerequisites for admission to the MS-phase by the time they have achieved senior status. If a student is removed or decides to withdraw from the program, any 600 level courses taken may be used to fulfill the requirements for a Bachelor of Science in Computer Science.

Computer Science as a Second Major

A second major in Computer Science is available to all students. A second major in Computer Science requires completion of the requirements of either the Bachelor of Science version or the Bachelor of Arts version.
MINOR

A minor in Computer Science requires completion of the following:

- CSC 120 - Computer Programming I
- CSC 220 - Computer Programming II
- CSC 314 - Computer Organization and Architecture
- 6 credits from CSX 2XX, CSC 3XX, CSC 4XX, CSC 5XX

NOTES

- A grade of C- or better is required in all CSC courses in a major, honors, or minor.
- The overall GPA for CSC courses in a major must be 2.5 or better.
- For all Computer Science majors, at least 15 credits of CSC courses must be completed at the University of Miami.
- For the Computer Science minor, at least 9 credits of CSC courses must be completed at the University of Miami.

DEPARTMENTAL HONORS

In addition to the University’s requirements for Departmental Honors, Departmental Honors in Computer Science requires completing a major and 6 additional approved credits (all CSC 4XX and CSC 5XX courses are approved). The major or additional credits must include at least 6 credits from CSC 410 and CSC 411.

Computer Science Course Listing
CRIMINOLOGY
www.as.miami.edu/sociology

INTRODUCTION

The major in Criminology provides a comprehensive understanding of crime and the criminal justice system. The major prepares students to assume roles of leadership in this critical area of modern society. Courses are designed to review theory, research, and applications of knowledge regarding delinquency and crime, as well as to understand the manner in which offenders are processed. Students learn about the nature and extent of crime, different types of crime, and theories to explain crime. In addition, detailed analyses are made of the functions of the law, police, courts, and correctional systems and the ways in which these are linked to broader aspects of society. Students may also minor in Criminology. The Criminology major and minor are administered through the Department of Sociology.

EDUCATIONAL OBJECTIVES

CRIMINOLOGY courses have several broad objectives, including:

1. General education and development of critical thinking skills.
2. Undergraduate preparation for pursuing careers in such fields as law and society, in the local and state criminal justice systems (e.g., juvenile probation officer, pretrial services officer, crime analyst for criminal justice agencies), or in federal agencies (e.g., DEA).
3. Preparation for graduate study in criminology, criminal justice, sociology, or other social and behavioral sciences.
4. Preparation for law school.

DEGREE PROGRAMS

Students may earn a Bachelor of Arts degree in Criminology. The Department of Sociology also offers graduate degrees in Sociology (M.A., Ph.D.) with emphases in criminology and in other areas (race/ethnic relations and medical sociology).

MAJOR

The major in Criminology consists of 31 credit hours, including:

Required courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC 101</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 210</td>
<td>Introduction to Social Research^1</td>
<td>3</td>
</tr>
<tr>
<td>SOC 211</td>
<td>Quantitative Methods for Sociologists^2</td>
<td>3</td>
</tr>
<tr>
<td>SOC 212</td>
<td>Quantitative Methods Lab</td>
<td>1</td>
</tr>
<tr>
<td>SOC 371</td>
<td>Criminology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 470</td>
<td>(Theories of Deviant Behavior)</td>
<td>3</td>
</tr>
</tbody>
</table>
One of the following two courses:

SOC 271 Criminal Justice (3 credit hours)
SOC 370 Juvenile Delinquency (3 credit hours)

Elective courses

Four other courses offered by the Department for a total of 12 credits.

Other Requirements
- A minimum final grade of C- in all courses offered by the Department
- A minimum cumulative GPA of 2.0 in all courses offered by the Department
- A minimum of 16 credits must be earned in residency in the Department; thus, only a maximum of 15 credits can be transferred from other institutions as eligible for the CRIMINOLOGY major.

MINOR

A minor in Criminology requires a minimum of 15 credit hours, including:

Required Courses

SOC 101 Introduction to Sociology (3 credit hours)
SOC 371 Criminology (3 credit hours)

Elective Courses

Three other courses offered by the Department, of which one must be 300-level or higher, for a total of 9 credits.

Other requirements
- A minimum final grade of C- in all courses offered by the Department
- A minimum cumulative GPA of 2.0 in all courses offered by the Department
- A minimum of 9 credits must be earned in residency in the Department; thus, only a maximum of 6 credits may be transferred from other institutions as eligible credits for the Criminology major.

1 EPS 452 can be substituted for SOC 210 only by students who are also enrolled in the School of Education.
2 PSY 204 can be substituted for SOC 211 and SOC 212 only by students who are also majoring in Psychology.
DEPARTMENTAL HONORS

Graduation with Departmental Honors is available to eligible students who fulfill the following:

1. Students desiring Departmental Honors in Criminology must maintain an overall GPA of 3.3 and a GPA of 3.5 in Criminology. They must also achieve a minimum of B in all Criminology courses. For transfer students, the Department uses the cumulative, combined GPA calculated by the Office of the Registrar.

2. A student seeking Departmental Honors is required to write an independent research paper which is submitted to the Undergraduate Committee in the Department of Sociology. The nature of the independent research project is determined by the faculty member(s) with whom the student works. This project is done in SOC 498 & SOC 499 (Honors I & II). The student should have the same professor for all six credits.

3. Recruitment of eligible students is by departmental invitation at the beginning of a student’s junior year.
INTRODUCTION

Economics uses the idea of maximizing behavior to provide a unified framework for studying human action. The economics curriculum is designed to give students an understanding of economic theory and its application to a wide range of human behavior. The program provides excellent preparation for careers in business, in government, and in international agencies. It is particularly recommended for students planning graduate study or professional training in fields such as law, business, international studies, public administration, and economics.

MAJOR

The major in economics consists of at least 24 credits, which must include:
ECO211
ECO212
ECO301
ECO302
MTH130 or MTH161 is required of all Economics majors and minors. The calculus course must be completed before enrolling in ECO302.

MINOR

Arts and Sciences students may minor in economics and are required to take ECO211, ECO212, ECO302 and two additional economics courses for a total of 15 credits.

Note: All courses submitted for the major or minor must be completed with a grade of C- or higher and with an overall grade point average of C or higher.

Academically qualified students may elect to take courses from the Departments curriculum for Honors credit.

Economics Course Listing
INTRODUCTION

The undergraduate program in Ecosystem Science and Policy (ECS) is offered by the Leonard and Jayne Abess Center for Ecosystem Science and Policy. The goal of the program is to educate the next generation of environmental leaders. The ECS program provides students with a broad background in environmental issues from a variety of perspectives, along with in-depth education in an area of specialization.

EDUCATIONAL OBJECTIVES

The ECS major offers a series of problem-based learning courses, culminating in a capstone course in the senior year. Courses emphasize integration of science and policy approaches to real-world environmental issues. This preparation gives students both the theoretical background and technical skills to pursue environmental careers in teaching and research, as well as for careers in government and private industries concerned with the environment.

DEGREE PROGRAMS

The Ecosystem Science and Policy program offers two undergraduate degree major programs: a Bachelor of Science (B.S.) and a Bachelor of Arts (B.A.). The ECS degree is a double major program. Students earning a B.S. in ECS must also complete a second major from one of the following disciplines: biology, biochemistry, chemistry, computer science, engineering, geological sciences, mathematics, microbiology, or physics. Students earning a B.A. in ECS must also complete a second major in a non-science area or the B.A. major in either geological sciences or in biology. Students are required to complete either an environmentally related internship or a research project with the Center for Ecosystem Science and Policy or with other UM faculty. Students earning dual degrees, for example from the College of Engineering and College of Arts and Sciences, must complete the ECS major and a minor in another area.

Only those courses passed with a grade of “C-” or better in the ECS core may be applied to the major or minor. All ECS majors are required to maintain an overall cumulative grade point average of 2.5 or better in order to graduate with a double major in ECS.

MAJOR

Bachelor of Science Degree: The B.S. degree is recommended for students intending to attend graduate or professional schools in pursuit of research or academic careers (including secondary or higher education). It is also suitable for those preparing for technical careers in government and private industries concerned with the environment. In addition to the College of Arts and Sciences general education requirements, the B.S. requirements are as follows:
ECS Core:
ECS 111, 112, 113, 201 or 202, 301, 302, 403, and either ECS 401 (internship) or 402 (research)

In addition, students must take the following courses, which may fulfill the College of Arts and Sciences general education or second major requirements:

Science Core:
Biology: BIL 160, 161 and 235
Chemistry: CHM 111/113, and 112/114
Environmental Pollution: CAE 240
Geological or Marine Sciences: One of GSC 110/114, or GSC 111 or MSC 111
Physics: PHY 101/106 or PHY 205, 206/208
Environmentally-related science or engineering electives to total 6 credits (at least 3 credits of which must be at the 300-level or above).

Mathematics:
As required by the College, all B.S. degree candidates must pass two semesters of calculus (MTH 151-162, MTH 161-162, or MTH 171-172) and one semester of a statistics course (e.g. ECS 204).

Social Science Core:
Economics ECO 211 and 212 or two of Political Science (POL 201, 202 or 203).
Environmentally-related social science electives to total 3 credits

Students with their second major in the College of Engineering should follow the general education and mathematics requirements of the College of Engineering.

Bachelor of Arts Degree: The B.A. degree is recommended in preparation for careers in law, government, business*, including professional schools and careers in government and private industries concerned with the environment. In addition to the College of Arts and Sciences general education requirements†, the B.A. requirements are as follows:

ECS Core:
ECS 111, 112, 113, 201 or 202, 301, 302, 403, and either ECS 401 (internship) or 402 (research)

In addition, students must take the following courses, which may fulfill the College of Arts and Sciences general education or second major requirements:

Science Core:
Ecology: ECS 232
Chemistry: CHM 101 or 111/113
Environmental Pollution: CAE 240
Geological Sciences: One of GSC 102, 103, 106 or GSC 110/114 or GSC 111
Marine Science: MSC 101 or 111
Environmentally-related science elective(s) to total 3 credits.
**Mathematics***:
As required by the College, all B.A. degree candidates must satisfactorily complete a MTH course numbered 108, or higher. All ECS majors must complete one semester of a statistics course (e.g., ECS 204).

**Social Science Core:**
Economics ECO 211 and 212 or two of Political Science (POL 201 and 202 or 203)
Environmentally-related social science* electives to total 9 credits (at least 3 credits of which must be at 300 level or above)

* Students with their second major in the School of Business Administration should follow the general education and mathematics requirements of the School of Business Administration. Environmentally-related business electives may be substituted for environmentally-related social science electives. See listing under the School of Business Administration for further information.

† Students with their second major in the School of Communication should follow the general education requirements for the School of Communication.

**MINOR**

**Minor in Ecosystem Science and Policy:**
A minor in ECS is 15 credits and includes:
ECS 111, 113, and 9 more credits in ECS (6 of which are at the 300-level or above)

[**Ecosystem Science & Policy Course Listing**](#)
EDUCATION

INTRODUCTION

Degree in Teacher Education for Elementary and Secondary Schools

The School of Education in conjunction with the College of Arts and Sciences and the School of Music offers a degree program in teacher education. Students majoring in Elementary may choose to earn their degree through the School of Education or the College of Arts and Sciences.

The program in Secondary Education enables a student to teach in a secondary school in the areas of English, Mathematics, Chemistry, Biology, Economics, Geography, History, International Studies or Political Science. Students wishing to earn certification in Secondary Education must complete a Bachelor of Arts or a Bachelor of Science degree in the College of Arts and Sciences with a major in Secondary Education. *

MINOR

TRADITIONAL EDUCATION MINOR

The requirements for a minor in education consist of 15-credits passed with a C or higher, with an overall GPA of 2.5 in courses selected from the list of acceptable TAL departmental courses. A minimum of six credits must be numbered 300 or higher. This minor does not lead to teaching credentials.

PROFESSIONAL TRAINING OPTION CERTIFICATE

The Professional Training Option (PTO) is a Florida Department of Education approved pathway for non-education majors to complete the Professional component, one of the requirements to become a certified teacher in the State of Florida.

The PTO minor ranges from 17-18-credits. Upon completion of the program participants will receive a Certificate of Completion. UM transcripts will indicate that the student has completed a Florida State approved PTO program. Program completers will be eligible to apply for a Temporary Teaching Certificate in the State of Florida.

* For specific information regarding required coursework, field experiences, and State requirements, please see an academic advisor in the School of Education.
Courses for the PTO minor are:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAL101</td>
<td>Social and Technological Foundations of Education</td>
</tr>
<tr>
<td>TAL103</td>
<td>Psychological Foundations of Education</td>
</tr>
<tr>
<td>TAL304</td>
<td>Content Area Reading and Learning Strategies</td>
</tr>
<tr>
<td>TAL305</td>
<td>Classroom and Behavior Management</td>
</tr>
<tr>
<td>TAL540</td>
<td>Instruction and Assessment in the Secondary School</td>
</tr>
</tbody>
</table>

One course selected from the following list as appropriate for the subject area:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAL506</td>
<td>Issues and Strategies for ESOL</td>
</tr>
<tr>
<td>TAL524</td>
<td>Education and the Arts</td>
</tr>
<tr>
<td>TAL541</td>
<td>Instruction in Secondary English</td>
</tr>
<tr>
<td>TAL542</td>
<td>Instruction in Secondary Mathematics</td>
</tr>
<tr>
<td>TAL543</td>
<td>Instruction in Secondary Science</td>
</tr>
<tr>
<td>TAL544</td>
<td>Instruction in Secondary Social Studies</td>
</tr>
</tbody>
</table>

**OTHER**

All education programs are approved by the State of Florida Department of Education.

* For specific information regarding required coursework, please see an education advisor.
ENGINEERING
www.miami.edu/engineering

MINOR

The College of Engineering offers the student in the College of Arts and Sciences a variety of 15-credit minors designed to give the student a basic understanding of the technologies that support and shape our civilization. Minors may be elected in Civil, Architectural, Environmental, Electrical, Computer, Industrial, or Mechanical Engineering. The student is given considerable freedom in choosing courses in accordance with the student’s interests.

Faculty in the College are prepared to assist students seeking Engineering minors in the preparation of programs of study.

More detailed descriptions of these minors will be found in the COLLEGE OF ENGINEERING section of this Bulletin.
ENGLISH - Dept. Code: ENG
www.as.miami.edu/english

INTRODUCTION

The English Department offers programs for students interested in a liberal arts education. While many English majors direct their studies toward careers in law, business, creative writing, secondary education, or university teaching and scholarship, an English major is just as valuable to students considering careers in any of the health professions. Students who would like to learn more about any of these programs are encouraged to consult the Director of Undergraduate Studies in the Department of English, Ashe Bldg. 321.

EDUCATIONAL OBJECTIVES

English as a discipline offers an opportunity for a general humanistic education, and it develops skills in communication and analysis essential in most careers. An education in English teaches students to write, to think critically, to weigh values, and to communicate ideas; at the same time, it affords them a sense of beauty and informs them of the heritage of their own culture as well as others.

DEGREE PROGRAMS

The major in English leads to the degree of Bachelor of Arts.

MAJOR

Students majoring in English must earn 30 credits in English courses (36 credits for Departmental Honors) and must meet the requirements for one of the tracks described below:

The English Literature Major,
The Creative Writing Concentration,
The Concentration in British Literary History, or
The Women's Literature Concentration.

Credits earned for courses in freshman composition (ENG 105, 106, 107, and 208) may not be applied toward the total number of credits required for the major. In each English course, the English major must make a grade of C- or better, with an overall GPA in the major of 2.0.

ENGLISH LITERATURE MAJOR

Requirements for the English Literature Major are as follows:

1. One of the following courses: English 201, 202, 205, 211, 212, 213, 214, 215, 260, 261. (N. B., ENG 210 may not be used toward the fulfillment of this requirement.)

3 credits
2. Four literature courses numbered 300 or above, at least two of which must be numbered 400 or above, distributed as follows: two courses in literature before 1700 and two courses in literature between 1700 and 1900.  

3. Five additional English courses other than freshman composition (i.e., any three courses designated ENG and numbered 200 or above, excluding ENG 208).

Total: 30 credits

CREATIVE WRITING CONCENTRATION
Requirements for the Creative Writing Concentration are as follows:

1. Admission to the Creative Writing Concentration is based on a writing sample submitted to the Director of Creative Writing. (For information about the writing sample, see the English Department Web site, www.as.miami.edu/English).

2. Completion of one of the following workshop tracks:

   Fiction track:  ENG 290  
                  ENG 390  
                  ENG 404 (to be taken twice) or  
                  ENG 404 (taken once) plus ENG 408  
                  3 credits  

   Poetry track:  ENG 292  
                  ENG 392  
                  ENG 406 (to be taken twice) or  
                  ENG 406 (taken once) plus ENG 408  
                  3 credits  

3. One of the following courses: English 201, 202, 205, 211, 212, 213, 214, 215, 260, 261. (N. B., ENG 210 may not be used toward the fulfillment of this requirement.)  

4. Four more literature courses numbered 300 or higher, at least two of which must cover literature earlier than 1900. Two of the four courses must be 400-level.

5. One more literature course numbered 200 or higher.

Total: 30 credits
CONCENTRATION IN BRITISH LITERARY HISTORY
Requirements for the Concentration in British Literary History are as follows:

1. English 211 and 212.  
   \[6 \text{ credits}\]

2. Eight courses numbered 300 or above, at least four of which must be numbered 400 or above, distributed as follows:
   - One course on Shakespeare;
   - One course on the history of criticism or literary theory;
   - Two additional courses in British literature (or a combination of British and other literatures) before 1800;
   - Two additional courses in British literature (or a combination of British and other literatures) after 1800;
   - Two electives.  
   \[24 \text{ credits}\]

3. Recommended: ancillary courses in Art History, Music, History Philosophy, in consultation with a departmental advisor.  
   \[\text{Total: } 30 \text{ credits}\]

WOMEN’S LITERATURE CONCENTRATION
Students considering this concentration may want to take a special Women’s Studies section of English 106 in the freshman year.
Requirements for the Women’s Literature Concentration are as follows:

1. English 215.  
   \[3 \text{ credits}\]

2. Four \textit{literature} courses numbered 300 or above, at least two of which must be numbered 400 or above, distributed as follows:
   - two courses in literature before 1700 and, two courses in literature between 1700 and 1900.  
   \[12 \text{ credits}\]

3. Five additional English courses other than freshman composition (i.e., any two courses designated ENG and numbered 200 or above, \textit{excluding} ENG 208).  
   \[15 \text{ credits}\]

4. Three of the courses in 2 and 3, above, must be chosen from the following: English 372, 373, 374, 490, 494, or any English course numbered 200 or higher (other than ENG 215) cross-listed with Women’s and Gender Studies.  

5. Recommended: ancillary courses in Women’s and Gender Studies, in consultation with a departmental advisor.  
   \[\text{Total: } 30 \text{ credits}\]
MINOR

The student minoring in English completes, with a grade of C- or better in each course and with an overall GPA in the minor of 2.0, at least 15 credits at the 200-level or above beyond the credits earned for freshman composition. The 15 credits must be distributed as follows:

1. One literature course at the 200-level;
2. A second literature course, at either the 200-level or the 300-level;
3. A third literature course, at the 400-level;
4. Two additional English courses other than freshman composition (i.e., any two courses designated ENG and numbered 200 or above, excluding ENG 208).

DEPARTMENTAL HONORS

DEPARTMENTAL HONORS IN LITERATURE
Students interested in seeking Departmental Honors in English should consult the Director of Undergraduate Studies in English, normally before the end of the junior year.

To enter the program a student must have achieved by the end of the junior year a 3.5 average in English courses and a 3.3 average overall. In addition to fulfilling the requirements for the English Literature Major, the candidate for Departmental Honors must:

1. Take at least three literature courses at the 400-level or higher in fulfilling requirement 2 of the English Literature Major.
2. Complete a six-credit Senior Thesis. This thesis is a documented essay of about 10,000 words on a literary subject. The student undertaking a Senior Thesis normally registers in ENG 497, Senior Thesis I for the first semester of the project, and in ENG 498, Senior Thesis II, for the second semester. The student must receive a grade of B or higher in both courses in order to qualify for honors.
3. Over the course of this two-semester sequence, students will be expected to participate in 3-4 workshops addressing different aspects of the writing process for independent research projects.
4. Receive for the thesis a recommendation for honors by the director of the Senior Thesis and by one other faculty reader from the Department of English.
5. Achieve an average in the major of at least 3.5, and an overall average of at least 3.3.

Total: 36 credits

DEPARTMENTAL HONORS IN CREATIVE WRITING
To enter the program a student must have achieved by the end of the junior year a 3.5 average in English courses (including courses in creative writing) and a 3.3 average overall. In addition to meeting the requirements for the Creative Writing Concentration, the candidate for Departmental Honors must:

1. Take at least three literature courses at the 400-level or higher in fulfilling requirement 4 of the Creative Writing Concentration.
2. Complete a six-credit Senior Creative Writing Project. The student undertaking this project normally registers in ENG 497, Senior Thesis I, for the first semester of the project, and in ENG 498, Senior Thesis II, for the second semester. The student must receive a grade of B or higher in both courses in order to qualify for honors.  

6 credits

3. Receive for the project a recommendation for honors by the director of the Senior Creative Writing Project and by one other faculty reader designated by the Director of Creative Writing.

4. Achieve an average in the major of at least 3.5, and an overall average of at least 3.3.

Total: 36 credits

DEPARTMENTAL HONORS IN WOMEN’S LITERATURE
To enter the program a student must have achieved by the end of the junior year a 3.5 average in English courses and a 3.3 average overall. In addition to fulfilling the requirements for the Women’s Literature Concentration, the candidate for Departmental Honors must:

1. Take at least three literature courses at the 400-level or higher in fulfilling requirements 2 and 3 of the Women’s Literature Concentration.

2. Complete a six-credit Senior Thesis. This thesis is a documented essay of about 10,000 words on a literary subject. The student undertaking a Senior Thesis normally registers in ENG 497, Senior Thesis I, for the first semester of the project, and in ENG 498, Senior Thesis II, for the second semester. The student must receive a grade of B or higher in both courses in order to qualify for honors.  

6 credits

3. Over the course of this two-semester sequence, students will be expected to participate in 3-4 workshops addressing different aspects of the writing process for independent research projects.

4. Receive for the thesis a recommendation for honors by the director of the Senior Thesis and by one other faculty reader from the Department of English.

5. Achieve an average in the major of at least 3.5, and an overall average of at least 3.3.

Total: 36 credits

English Course Listing
INTRODUCTION

Geography and Regional Studies is concerned with the spatial or locational dimensions of environmental phenomena and organizational patterns of human activity on the earth’s surface. Concretely, geography deals with the analysis of topics ranging from environmental problems, political boundary disputes, and ethnic conflict to applied and more localized issues such as establishing new voting districts to provide better representation for ethnic minorities, determining where the next freeway link should be built, assessing the location of oil pipelines, or various matters regarding urban planning and governance.

Traditionally, geographers have regional expertise combining topical and geographic fields of knowledge: for example, population issues in the Caribbean, sustainable development in the Amazon basin, economic and political integration in Europe, territorial conflict in the Middle East, or the growth of megacities in South Asia.

Geographers are prepared for positions in teaching, government, private business, urban and regional planning, cartography, geographic information systems (GIS), conservation, and environmental analysis. The University of Miami’s Department of Geography and Regional Studies offers a wide range of specializations that relate to the social sciences at large and especially the field of international studies. Processes of globalization have increased the importance of the geographical analysis of human society and particularly the linkages between global processes and local outcomes and the growing interconnections of places across the globe.

EDUCATIONAL OBJECTIVES

The Department of Geography and Regional Studies offers specializations in areas such as:
- International migration
- Urban geography and international urbanization
- Environmental studies
- International and regional development
- Globalization

In addition, there is a range of courses on world regions such as Europe, the Middle East, Middle America, South America, etc. Finally, the department offers a set of courses that provide training in indispensable skills for everyone entering the present-day labor market:
- Research methodology
- Statistics
- Computer cartography
- Geographic information systems
- Remote sensing of the environment

DEGREE PROGRAMS

The major in Geography and Regional Studies leads to the degree of Bachelor of Arts.
MAJOR

GEOGRAPHY AS A FIRST MAJOR
REQUIREMENTS FOR GEOGRAPHY AND REGIONAL STUDIES
Students in the College of Arts and Sciences who take Geography and Regional Studies as a major must complete the following requirements:

I. Students must take at least 30 credits in geography courses.

II. For a geography course to count towards the major, the student must achieve a grade of C- or higher.

III. The overall GPA in courses toward the major must be 2.00 or higher.

IV. Majors must successfully complete three of the following courses:
    GEG 105
    GEG 110
    GEG 120
    GEG 199

V. Majors are required to take GEG 501 (Place, Nature, and Region) as a capstone course.

GEOGRAPHY AS A SECOND MAJOR
Students who take Geography and Regional Studies as a second major must complete the following requirements:

I. Students must take at least 24 credits in geography courses.

II. For a geography course to count towards the major, the student must achieve a grade of C- or higher.

III. The overall GPA in courses counting toward the major must be 2.00 or higher.

IV. Majors must successfully complete two of the following courses:
    GEG 105
    GEG 110
    GEG 120
    GEG 199

V. Majors are required to take GEG 501 (Place, Nature, and Region) as a capstone course.

MINOR

Students in the College of Arts and Sciences who take Geography as a minor must meet the following requirements:

I. Completion of at least 15 credits in Geography courses.

II. For a Geography course to count towards the minor, the student must achieve a grade of C- or higher.
III. The overall GPA in courses counting toward the minor must be 2.00 or higher.

IV. At least 6 credits must be at the 300-level or higher.

**GIS Certificate Program**

This Certificate Program is designed to benefit students who seek to enhance their skills in geospatial technologies, especially Geographic Information Systems (GIS) and satellite remote sensing. Students will be exposed to standard software tools used in the industry, as well as satellite image data. Students who earn the Certificate will enhance their employment prospects and/or advance their careers in geospatial technology, particularly in job settings that stress the use of satellite remote sensing and vector-based GIS.

The Certificate requires a minimum of 15 credits, including three core courses and two or more electives completed with at least a C grade in each course. Students may also receive up to 6 credits toward the certificate for past course work completed at UM or other accredited colleges and universities within the past 3 years.

**CORE COURSES**

- Introduction to GIS (GEG 199)
- Intermediate GIS (GEG 391)
- Environmental Remote Sensing (GEG 392)

**ELECTIVES**

- Cartographic Design (GEG 280)
- Introduction to Microwave Imaging and Synthetic Aperture Radar (GEG 410)
- Introduction to Quantitative Methods (GEG 481 or GEG 580)
- GIS and Environmental Modeling (GEG 491)
- Internship (GEG 535)
- Advanced Quantitative Methods (GEG 582)
- Introduction to GIS for Graduate Students (GEG 591)
- Courses offered under Special Topics in Geography (GEG 545):
  - Web-GIS
  - Advanced SAR Techniques and Applications
  - Advanced Spatial Statistics
  - GIS in Public Health

**OTHER**

**INTERNSHIP CREDIT**

Students are encouraged to find a suitable internship experience with the Career Planning and Placement Center. Upon approval, 3 to 4 credits may be earned with an internship. These credits will be included in the fulfillment of major requirements (GEG 535).

**OVERLAPPING COURSES AMONG DUAL MAJORS**

Of the coursework at the 200-level or higher in Geography and Regional Studies, no more than 6 credits may count double towards the other major.
STUDY ABROAD

Majors are strongly encouraged to study abroad for a summer, a semester, or an entire year. Study abroad at carefully selected institutions will complement the student’s curriculum and area of specialization, will enhance fluency in the foreign language, and will result in heightened affinity for a foreign culture. The study abroad experience need not result in credit overloads or extended time spent in the program.

ACADEMIC STANDING

Only courses in which the grade of C- or better is attained may be counted towards the major or minor, and students must maintain a GPA of 2.00 or better in all required courses.

For more information e-mail ssr@miami.edu, come by the Department of Geography and Regional Studies at 229 Ferre, or call (305) 284-4087 to make an appointment.

Geography and Regional Studies Course Listing
GEOLOGICAL SCIENCES - Dept. Code: GSC
www.as.miami.edu/geology

INTRODUCTION

Geological Sciences is concerned with Planet Earth, its origin, evolution, structure, internal and surface processes, mineral resources, environmental preservation, global dynamics, paleoclimate reconstruction, and life history. Geologists use their knowledge of chemistry, biology, physics and mathematics to solve Earth problems.

EDUCATIONAL OBJECTIVES

Geological Sciences undergraduates are prepared for careers in industry as well as graduate study in geosciences, the environmental sciences, and marine sciences. Career paths include research and teaching, as well as employment in the petroleum and mineral industries and in industries and government organizations concerned with energy resources, geodynamics, the marine environment, conservation, and climate change.

DEGREE PROGRAMS

The Department of Geological Sciences offers three undergraduate degree major programs and two double major programs:

- Bachelor of Science (B.S.)
- Bachelor of Arts (B.A.) in Geological Sciences
- Five-year Master of Science Program (M.S.)
- Geological Sciences/Marine Science (Double Major)
- Geological Science/Ecosystem Science and Policy (Double Major)

For the Geoscience Graduate Program please see the Division of Marine Geology and Geophysics at the RSMAS campus.

MAJOR

BACHELOR OF SCIENCE (B.S.)

The B.S. in Geological Sciences is recommended as preparation for graduate school and careers in professional research and science teaching. As described in sections 3 and 4 below, a B.S. in Geological Science requires a strong foundation in mathematics and several applied sciences.

1. Students must complete a core curriculum of 34 credits (GSC 110 or 120; 114 or 115; 111; 260; 360; 380; 410 or 420; 440; 480, and 482) with a grade of C- or better and with an overall GPA of 2.0.

2. In addition, the B.S. candidates must complete a summer field course (GSC 580 or an approved field course through another university).
The field course (GSC 580 or an approved equivalent at another University) is required for B.S. students and encouraged for others in order to gain practical experience in the skills of observation, interpretation, measuring, sampling, mapping and report writing. This requirement, when completed, has proven to be a strong asset when applying for graduate work or employment.

3. As required by the College, all B.S. degree candidates must pass two semesters of calculus (MTH 161-162 or MTH 171-172) and either (a) one semester of a computer course or (b) a statistics course.

4. Students are also encouraged to take one or more of MTH 210, MTH 211, MTH 224, MTH 311, MTH 312. CHM 111 is required (CHM 112, CHM 113, and CHM 114 are all recommended). Two semesters of college physics (PHY 101-102) are required. Two semesters of university physics (PHY 205-206) are recommended in lieu of college physics.

5. All Geological Sciences majors must also complete the “Required Areas of Study” of the College (see under COLLEGE OF ARTS AND SCIENCES in this Bulletin).

6. B.S. students must choose a minor from the following:  
   Biology  
   Chemistry  
   Computer Science  
   Ecosystem Science and Policy  
   Marine and Atmospheric Science  
   Mathematics  
   Physics  

Geological Sciences B.S. students desiring a minor in Ecosystem Science and Policy must take ECS111, ECS112, ECS113, ECS(201 or 202), and 6 other science focused credits in ECS courses at the 300-level or above (ECS301, ECS380 series, and ECS580 series; and ECS372 series with approval of Departmental Chair).

**BACHELOR OF ARTS in GEOLOGICAL SCIENCES**

The B.A. in Geological Sciences is recommended for science oriented students who plan to use an understanding of Earth systems in their professional careers but desire a broader liberal arts education or are pursuing a dual major outside the sciences. B.A. students must complete a core curriculum of 24-27 credits including:

Two courses in the GSC 101, 102 or 111, 103 or 110 or 120 series; GSC 114 or 115; 260; 360; 482; and 8 additional credits at the 300 – 500 level with a grade of C- or better and with an overall GPA of 2.0.

In addition, B.A. students are strongly encouraged to take the summer field course (GSC 580) and/or field courses offered during spring break (GSC 231 or GSC 311).

**FIVE YEAR B.S. / M.S. IN GEOLOGICAL SCIENCES AND MARINE GEOLOGY**

A 5-year B.S. /M.S. in Geological Sciences and Marine Geology allows qualified students to complete a master’s degree in one year of study beyond the B.S.
The B.S. degree in Geological Sciences is offered through the Department of Geological Sciences in the College of Arts and Sciences. The Master of Science (M.S.) degree in Marine Geology and Geophysics is offered through the Division of Marine Geology and Geophysics in the Rosenstiel School of Marine and Atmospheric Science (RSMAS).

Undergraduate requirements are listed under the B.S. degree above with the Honors option. By the beginning of their junior year students should have obtained a graduate faculty advisor, selected an approved topic for research, and begun work on their senior thesis as preparation for the M.S. In the senior year, students will increase their focus on graduate courses and work closely with their graduate faculty advisor. Contact the Geological Sciences chair at the departmental office (305-284-4253) for more information.

**DOUBLE MAJOR**

Double majors are offered in cooperation with the Marine and Atmospheric Science Program and the Ecosystem Science and Policy Program.

1. Marine Science (MSC): This program consists of a major in the Geological Sciences and a major in Marine Science. Interested students should read the information under Marine and Atmospheric Science in this Bulletin and contact the Marine Science office (184 Cox Science or 284-2180) for details.

2. Ecosystem Science and Policy (ECS): This program consists of a major in Geological Sciences and a major in Ecosystem Science and Policy (ECS). Interested students should read the information under ECS in this bulletin and contact the ECS office (058 Cox).

**MINOR**

The minor in Geological Sciences consists of 16 credits in courses numbered 110 or higher. A minimum grade of “C-” must be earned in each course with an overall GPA of 2.0.

**DEPARTMENTAL HONORS**

Honors in Geological Sciences may be earned by students in good standing within the University Honors program. In addition to their general requirements, a student must have an overall GPA of 3.0 or better, and also perform research beginning prior to their senior year, resulting in a written Honor’s Thesis and oral defense approved by the student’s thesis advisor.

[Geological Sciences Course Listing]
INTRODUCTION

History is the systematic study of the past. The study of history includes training in how to gather information, how to research issues and problems, how to analyze data and construct arguments, and how to communicate ideas in writing. These are essential skills, tools that are prized in the world beyond the university. A major in history is an excellent beginning and solid stepping stone to professional school and the business world. For goals ranging from law to journalism, and from medicine to the MBA, history serves as a versatile undergraduate major. Multinational businesses demand that their executives understand the peoples and cultures around them, and be able to communicate that understanding effectively. If an occupation demands critical thinking and analysis, a background in history is invaluable.

EDUCATIONAL OBJECTIVES

All history courses expose students to historical interpretation and critical analysis. Courses at the 100 and 200 levels are intended as introductions to broad fields of history and are open to students with no previous college-level history experience. All 300 level history courses are writing intensive, are graded principally through essay examinations and short papers, and count toward the fulfillment of the University of Miami writing across the curriculum requirement. I. Courses at the 400 level are programs of individual directed study. Permission of the instructor is required in each case, and such permission is normally given only to students who have completed a lower-level course with the faculty member in question. Courses at the 500 level require a 300 level history course as prerequisite. All 500 level courses deal extensively with the historiography of their particular subjects, and all require a written research project as a major component of the work of the course.

DEGREE PROGRAMS

The major in History leads to the degree of Bachelor of Arts.

MAJOR

A major in history consists of at least 30 credits in history with a grade of C- or better in each course, and with a cumulative GPA of at least 2.0 in history courses. These credits may include history courses taken for general distribution requirements, and must include at least 18 credits at the 300 level or above, of which at least 6 credits must be taken in the form of 500-level seminars. (HIS599 Independent Research does not count). All courses for majors will be selected by students in consultation with advisors designated by the department.

Credits from other institutions may be counted toward the major or minor, and to general distribution requirements as appropriate, but departmental approval is required in each case. Students who complete the Advanced Placement course in either United States or European history and pass the examination with a grade of 4 or 5 may receive credit in the
appropriate history courses. Students who complete the International Baccalaureate program and pass the higher level history examination with a grade of 6 or higher will receive 3 credits in the appropriate entry-level history course. (However, in some cases students will only receive elective credit). At least 18 credits of the major and at least 9 credits of the minor must be completed at the University of Miami.

The department offers a variety of study abroad options with credit toward the major or minor.

**MINOR**

A minor in history consists of at least 15 credits in history with a grade of C- or better in each course, and with a cumulative GPA of at least 2.0 in history courses. These credits may include history courses taken for general distribution requirements, and must include at least 9 credits at the 300 level or above. Courses for minors should be selected in consultation with a departmental advisor.

**DEPARTMENTAL HONORS**

History majors with a cumulative GPA of at least 3.6 in history courses may earn departmental honors by completing a research project of 6 credits judged worthy of honors by a departmental committee, provided that at least 6 courses worth 18 credits have been completed at the University of Miami.

**OTHER**

For the requirements of the M.A. and Ph.D. degrees in history see the Bulletin of the Graduate School.
INTERNATIONAL STUDIES - Dept. Code: INS
http://www.as.miami.edu/international-studies

INTRODUCTION

The International Studies major provides a focused educational experience aimed at familiarizing students with the key structural features and dynamics of the international system and preparing them to enter the growing international job market. Processes of globalization, in part driven by global capital flows, expanding trade and the unrelenting development of communication and information technologies, have affected virtually everyone in every country, often in ways we are just beginning to understand. These developments often pose serious problems for government and other societal institutions, while also creating a demand for individuals who understand international processes. Jobs in virtually all sectors have acquired a decidedly international dimension, whether in trade, tourism, finance, public policy, government, or education. INS Graduates have moved on to the corporate world, the public sector, started their own businesses, or have continued their studies at the graduate level (i.e. Law, Business, and International Studies).

EDUCATIONAL OBJECTIVES

International Studies seeks to provide students with the ability to understand:

- International politics within the context of interstate relations and foreign policy.
- International economics and its sub-discipline international political economy, including such issues as trade and production, money and finance, and development.
- Social science research methods including qualitative, quantitative, comparative case study and formal modeling.

Students are encouraged to explore interdisciplinary options that further their understanding of international studies. This type of coursework can be taken in other disciplines offered at the university or taken outside the institution, either through exchange programs or other inter-institutional options provided by UM. Students will demonstrate the ability to synthesize the various thematic areas of the discipline through required participation in advanced seminars. Seminars will stress analytical participation, oral presentations and the ability to interpret and critique core theoretical readings.

DEGREE PROGRAMS

International Studies provides both a major and minor option for students. The flexibility of the program often allows students to double major without the need to extend their university studies. Students are encouraged to speak with the International Studies advisor to explore such possibilities. The major in International Studies leads to the degree of Bachelor of Arts.
MAJOR

Requirements for the Major in International Studies (30 credits)

The International Studies major consists of three components:
I. Core Requirements
II. Thematic Core
III. INS Electives

I. Core Requirements (12 credits)
INS 101* Global Perspectives – Introduction to International Studies.
INS 102 Global Economics.
INS 201* Globalization and Change in World Politics.
INS 202 Research Methods in International Studies.

* These courses must be completed before taking the Thematic Core courses.

II. Thematic Core (12 credits):
Students should choose at least one course from each of the following four fields. Additional classes will be counted toward the elective portion of the INS major, if taken. Other courses, including classes in other disciplines, may be taken with the approval of the INS Advisor.

International Politics, Foreign Policy and Peace Studies:
INS 341 Nationalism, Ethnicity and Conflict
INS 540 International Peace and Conflict Resolution
INS 542 Drug-Trafficking in the Americas
INS 560 US Foreign Policy
INS 561 Negotiation and Bargaining
INS 566 US-Latin American Relations

Comparative Studies of Politics and Societies in a Globalizing World:
INS 330 Introduction to Comparative Analysis
INS 335 Democratization
INS 533 Transnational Social Movements
INS 534 The Military, State and Society
INS 565 The World Before European Domination
INS 584 Latin American Thought

International Economics, Political Economy and Development:
INS 320 Global Economics II
INS 321 Global Political Economy
INS 322 Economics of Development and Environment
INS 420 Global Trade
INS 520 Environmental Economics and Policy
INS 571 International Development and Human Welfare

International Law, Organizations, and Global Governance:
INS 460 United Nations Seminar
INS 564 International Law
INS 570 Globalization and Health
INS 573 Disasters, Terrorism and Global Public Health
INS 591 The European Union
INS 595 European Social Movements
III. INS Electives and Interdisciplinary Options (6 credits):

Students are required to take a total of 6 additional credits of elective course work from INS courses at the 300 level or above. With the approval of the INS Advisor, students may take courses from other departments outside of INS such as Geography and Regional Studies, History, Anthropology, Sociology, Political Science, Economics, Religion, Art History, Foreign Languages, Environmental Science, et cetera. Appropriate study abroad courses, an approved internship (INS 519), or an honors thesis (INS 418 & 419) may also be used to fulfill elective credit requirements.

Important Advising Notes for all International Studies Majors

1) Double Counting
Of the combined courses in the Thematic Core and the INS Electives, no more than 6 credits may count double towards a second major. A student may not count any course used to fulfill the requirements of the INS major toward a minor requirement.

2) Study Abroad
Students are strongly encouraged to study abroad for a summer, a semester, or an entire year, depending on the program. Study abroad at carefully selected institutions will complement the student’s curriculum and area of specialization, will enhance fluency in the foreign language, and will result in heightened affinity for a foreign culture. The study abroad experience need not result in credit overloads or extended time spent in the program.

3) Internship Credit
Students are encouraged to find a suitable internship during their undergraduate career. Upon approval by an advisor in the International Studies Undergraduate Program Office, 3 credits may be earned with an internship (INS 519), either toward the major or as elective credits (depending on the relevance of the particular internship to the INS major). The University’s Toppel Career Planning and Placement Center regularly advertises internships.

4) Academic Standing
Only courses in which a grade of C- or better is attained, may be counted towards the International Studies major and students must maintain a GPA of 2.75 or better in all major requirements (30 credits).

MINOR

Requirements for the Minor in International Studies (15 credits)
The International Studies Minor consists of two parts: (I) a 6-credit set of introductory courses; (II) 9 credits in advanced courses.

I. Base (6 credits)
Two of the following core requirements must be taken:
INS 101 — Global Perspectives - Introduction to International Studies
INS 102 — Global Economics
INS 201 — Globalization and Change in World Politics
INS 202 — Research Methods in International Studies
II. Advanced courses (9 credits).
In order to graduate with a minor in International Studies, students must take three INS courses at the 300-level or above. Advanced level courses from other departments may be taken if approved by the INS advisor.

Only courses in which a grade of C- or better is attained may be counted towards the minor in International Studies, and students must maintain a GPA of 2.75 or better in all minor requirements (15 credits).

DEPARTMENTAL HONORS

The Department of International Studies encourages its majors to intensify and deepen their knowledge of the field through its departmental honors program. The program is designed to give students the opportunity to explore various topics and problems in international studies that are of particular interest to them, to work more closely with departmental faculty, to develop skills in research and thesis preparation, and in some cases to prepare for graduate work in international studies and related fields.

Minimal requirements for the program are as follows:
1) a cumulative grade point average of at least 3.30;
2) a cumulative grade point average in international studies of at least 3.50; and
3) a thesis that is approved, with a grade of at least B+, by a member of the departmental faculty.

After reaching agreement with a member of the faculty who will serve as the honors thesis advisor, students writing a senior honors thesis will enroll in INS 418 and 419, Honors Thesis, for a total of six credits [the credits may be spread over two semesters or taken in a single semester]. The thesis itself is expected to be an extended, coherent work of scholarship on an issue of relevance in the field of international studies.

International Studies Course Listing
THE GEORGE FELDENKREIS PROGRAM IN JUDAIC STUDIES
Dept. Code: JUS
www.as.miami.edu/judaic

INTRODUCTION

The George Feldenkreis Program in Judaic Studies is a broad, flexible, non-theological interdisciplinary program designed for undergraduates to gain an understanding of Jewish civilization and its diverse cultural experiences. The program is an academic exploration of the multi-faceted, socio-historical, 4,000-year record of the Jewish people. Courses that are co-/cross-listed with the Program, highlight the variety of cultural, political, social, and religious experiences of Jews in different times and places.

EDUCATIONAL OBJECTIVES

The program is structured to provide a liberal arts education that will constitute a foundation for advanced academic study, professional careers in a variety of fields, and a more complex and rich understanding of the Jewish world. Judaic Studies courses meet distribution requirements for the Humanities and Social Sciences in the College of Arts and Sciences, the College of Engineering, the School of Communication, the School of Business, and the Frost School of Music and can be used to satisfy requirements by majors and non-majors.

MAJOR

The MAJOR (ten courses – 30 credits):

2. Survey of Jewish Literature (ENG 205).
3. A course in Hebrew at the 200-level or higher (which can be used simultaneously to fulfill the College of Arts and Sciences Language requirement).
4. One course in Ancient Jewish History and Society and one course in Modern Jewish History and Society. Courses will be designated appropriately by the Program Director each semester.
5. 15 more credits (5 courses) in classes listed in or co-/cross-listed with Judaic Studies, 12 credits of which must be completed at the 300-level or higher. Students who complete HEB 202 need only complete 9 credits at the 300-level or higher.

MINOR

The MINOR (five courses – 15 credits):

Students must complete at least one of the following 3 courses:

- JUS231 (Jewish Civilization: Society, Culture, and Religion)
- ENG205 (Survey of Jewish Literature)
- GEG300 (Jewish Geography)
Students are strongly encouraged to take Hebrew 101, at least one course designated as a "Modern Course," and at least one course designated as an "Ancient Course."

A grade of "C-" or better must be attained in each course with an overall GPA of 2.0.

NOTE: Any student who successfully completes 5 courses in the UGalilee Program shall also be awarded a minor.

DEPARTMENTAL HONORS

Honors in Judaic Studies consists of the items listed above under the Major, plus an Honors Thesis and one additional elective at the 300 level or higher.

OTHER

UGalilee Program

The Judaic Studies Program offers the UGalilee Program - A full semester each Spring at ORT-Braude College in Karmiel, a modern city in the Galilee, Israel (a bus and/or train ride away from Israel's major centers). Students earn a Judaic Studies Minor while studying in the Galilee, the birthplace of Rabbinic Judaism and Early Christianity. Students take five-six University of Miami courses taught by UM and Israeli scholars for a total of 15-18 UM credits and earn credits in Religion, History, Anthropology, Geography, Philosophy, or Judaic Studies and G.E.R. A pre-med option is in place. Students participate in faculty-led study trips to sites such as Jerusalem, Nazareth, Tel Aviv, the Golan, Caesarea, Sea of Galilee, Haifa, and Masada.

Don’t miss out on this exciting opportunity!

For more information on UGalilee visit our website at http://ugalilee.miami.edu/

Holocaust Survivors Service Internship (JUS 205/206)

Valuable, once-in-a-lifetime opportunity to meet with survivors of the Holocaust who currently reside in South Florida. Students are expected to commit to two semesters of service for 3 credits each semester. Credits may be earned for JUS, APY or Humanities requirements. About one hour a week or two hours every other week of contact is expected.

Students may be eligible, subject to availability of funds, for a Sue Miller Scholarship for the two semesters. Students will also earn a stipend of $250 per semester (to cover any transportation costs).

Students who participate in the program will assist Holocaust survivors as "friendly visitors." Student volunteers will meet six times each semester with a UM faculty member to share their experiences and to participate in enrichment activities.

The program is open to students of all denominations and backgrounds.

Judaic Studies Course Listing
LATIN AMERICAN STUDIES - Dept. Code: LAS  
www.as.miami.edu/lasp  
www.as.miami.edu/lasp/degrees/filas

INTRODUCTION

Latin American Studies offers an interdisciplinary approach to learning about the politics, economics, cultures, and societies of Latin America and the Caribbean. Undergraduate courses are offered in Africana Studies, American Studies, Anthropology, Architecture, Art and Art History, Biology, Communication, Economics, Geography, History, Journalism, International Studies, Marketing, English, Modern Languages and Literatures, Music, Musicology, Political Science, Religious Studies, Sociology, and Women’s and Gender Studies. The major in Latin American Studies is designed for the student who wants to acquire background knowledge about the area or who is interested in some aspect of Latin American and Caribbean affairs, such as government, law, business, research, journalism, or education. Students are strongly encouraged to spend at least one semester abroad on a program with a Latin American and Caribbean Studies component (see Office of International Education and Exchange Programs, 212 Allen Hall).

EDUCATIONAL OBJECTIVES

The goal of the BA in Latin American Studies is to acquire, advance and disseminate knowledge of the history, literature, culture, politics, economics, and natural and social sciences of the regions within an interdisciplinary framework, while at the same time emphasizing the languages and cultures of Hispanophone, Francophone and Lusophone Americas including the transnational study of Latin Americans, Caribbeans and their descendants in the United States. Students should leave the program with the following:

- the analytical and methodological tools needed to conduct interdisciplinary research;
- the ability to read, write and think critically about primary and secondary sources.
- a general knowledge of the different regions that comprise Latin America, the Caribbean and their Diaspora as well as a critical understanding that the geographic, political, and cultural boundaries that have traditionally defined the "area" as an object of study are not isomorphic and are connected to the interests of European and North American powers;
- a critical understanding of the competing ways in which Latin American and Caribbean peoples have represented themselves paying particular attention to race/ethnicity, class, gender and sexuality, language, religion, migration, transculturation, and other historical, social, economic, and political factors;
- a language competency in French, Spanish, Portuguese, or Haitian Creole at an intermediate level and a beginning competency in a language other than the above or in an indigenous language of Latin America and the Caribbean;
- a "Beyond the Books" experience that will bridge the gap between the university and the surrounding communities, and will help solidify a long-term interest in and commitment to the regions.
DEGREE PROGRAMS

Bachelor of Arts

MAJOR

MAJOR IN LATIN AMERICAN STUDIES (BA)
Program of Study:

1) Gateway Course in LAS (LAS101) 3 credits

2) Advanced language proficiency in Spanish, French, Portuguese, or Haitian Creole: This requirement may be met with SPA214, FRE214, POR212, or HAI201 or equivalent. 3 credits

3) Secondary language competence in another Latin American or Caribbean Language: This requirement may be met with SPA105, FRE105, POR105, HAI102 or equivalent, or by successfully completing a Latin American, Caribbean, or Indigenous language course in the DILS program. 3 credits

4) Six credits in Latin American history 6 credits

5) Eighteen (18) credits (six courses) in classes listed in LAS or cross-listed with LAS, 12 credits of which must be completed at the 300-level or higher. Courses that are not co- or cross-listed with LAS but do have a significant focus on Latin America may be taken with the approval of the degree director. A freshman seminar with a significant focus (25% or more) on Latin America or the Caribbean may be counted towards this requirement. SPA214 and FRE214 may be counted towards this requirement. 18 credits

6) Senior Seminar (LAS501) or Independent Study (LAS494) 3 credits

TOTAL 36 credits

**A C- or better for all major courses, with a GPA of 2.0

MINOR

Latin American Studies Minor
The minor in Latin American Studies may be obtained by completing 15 or more credits in courses on Latin America and the Caribbean, provided that they are selected from courses that fall outside the department of the student’s major. As part of the required 15 credits, students must successfully complete LAS501 or LAS494 to obtain a minor.
FILAS (Fellows in Latin American Studies)

In this highly selective Honors Program, students follow a rigorous, accelerated curriculum to complete a dual degree (B.A./M.A.) in Latin American and Caribbean Studies in five years. The program provides exciting collaborative research, travel, and work opportunities.

Working with UM's world-class faculty in various academic disciplines, FILAS participants design individualized curricula. In addition to the regular general education course requirements of the College of Arts and Sciences, FILAS students choose one focus track for their most advanced courses: Social Sciences, Literature & Culture, Communication, Environmental Studies, Public Health, or History. For broad-based, multi-disciplinary preparation, students choose courses that focus on Latin America and the Caribbean from the following categories (at least ten of these courses must be taken at the Master's level):

- One gateway seminar in Latin American Studies
- Two History courses
- Two International Studies courses
- Two Economics courses
- Two advanced Languages and Literatures courses (SPA, POR, FRE, or HAI)
- Seven courses in Study Abroad
- One course as internship/co-op credits
- Five courses above the 300-level (third-year) in a range of disciplines
- Ten courses in one focus track
- Six thesis credits (LAS710)

150 total credits

FILAS students also write a thesis based on an original research project. In addition, they present their findings in a meeting of the UM Center for Latin American Studies in their final semester.

FILAS ADMISSION REQUIREMENTS

- SAT1 composite score of 1360 or ACT 31.
- Top 10% of high school graduating class.
- Regular Application for Admission to the University of Miami. We recommend students submit their applications by November 15.
- Recommendations from three high school teachers.
- Statement of interest in FILAS, emphasizing prior language or area study
- To continue through the Master’s level, students must maintain at least a 3.4 GPA and they must take the GRE Exam.

DEPARTMENTAL HONORS

Students with an appropriate GPA are encouraged to contact the program to apply for departmental honors.
REQUESTS FOR INFORMATION
For more information, contact:
LAS Degree Programs
University of Miami
1111 Memorial Drive
Coral Gables, FL 33124-2302
(305) 284-8180
FAX (305) 284-2796
lasgrad@miami.edu

Latin American Studies Course Listing
EDUCATIONAL OBJECTIVES

The aim of these degree programs is to provide students with a core knowledge of mathematics essential to the understanding of science and other disciplines. Students should gain substantial problem solving and critical reasoning skills and should develop an understanding of the conceptual underpinnings of mathematics. The knowledge gained through these programs should provide the necessary background in mathematics for those students planning to go on to graduate study in mathematics and related fields. This knowledge should also prepare those students who will be immediately entering careers in science, business, education or other fields which are increasingly making use of mathematics.

DEGREE PROGRAMS

Bachelor of Arts and Bachelor of Science

MAJOR

The requirements of a major in mathematics vary according to the objectives of the student. The seven courses required of all mathematics majors are 161 (or 171), 162 (or 172), 210, 230, 310, 461 (or 561), 433 (or 533). An additional four courses are required, selected from one of the following options:

- **Core Mathematics**: four of 510, 512, 531, 532, 534, 551, 562.
- **Applied Analysis**: 311, 512, 513-514 or 515-516 (course work in physics is desirable).
- **Computational Mathematics**: 320, 517 (same as CSC 517), 520-521.
- **Probability and Statistics**: 224, 524-525, 542 (or 528).
- **Secondary School Teaching**: 224, 309, and two of: 502, 504, 505 (this option is only for those obtaining a teaching credential).
- **Mathematical Economics**: MTH 524-525, ECO 512 or ECO 520 or ECO 521, ECO 533.

It would be useful for students planning to do graduate study in mathematics to complete the following courses: 531, 532, 533, 534, 561, 562.

Students interested in actuarial science should choose the Probability and Statistics option; for these students a finance minor is recommended.
Transfer students will be permitted to apply up to 14 transfer credits towards the major; however, the courses 461 (or 561) and 433 (or 533) must be completed at the University of Miami.

A grade of C- or better is required for each course applied toward the major; the overall quality point average for University of Miami courses applied toward the major must be 2.5 or above.

MINOR

A minor in mathematics requires three of the following courses which must be taken in the Department of Mathematics, University of Miami: 210, 211 (or 310), 224, 230, 309, 311, 320, 359, 433, 461; 500-level mathematics courses with departmental approval.

A grade of C- or better is required for each of the three courses applied toward the minor; the quality point average for the three courses must be 2.5 or above.

DEPARTMENTAL HONORS

Requirements for departmental honors in Mathematics:
Three two-course sequences from 513-514, 515-516, 520-521, 524-525, 531-532, 533-534, 561-562; the student must attain at least a B in each course used to fulfill this requirement. In addition, the student must attain at least a 3.5 average over all courses counted toward the mathematics major and an overall (university-wide) average of at least 3.3.

For requirements leading to the Master of Arts, Master of Science, or Doctor of Philosophy degrees, with a major in mathematics, see the Bulletin of the Graduate School.

Mathematics Course Listing
INTRODUCTION

Microbiology and Immunology is an ancillary department in the College of Arts and Sciences. Our primary goal is to educate students in their chosen field and instill into them a desire for lifelong learning. Research opportunities and laboratory engagement help create knowledge in our students while preparing them to become active members of the scientific and public communities. A major in Microbiology and Immunology requires thorough preparation in chemistry, biology, biochemistry, physics, and mathematics.

EDUCATIONAL OBJECTIVES

1. To expose students to the various disciplines within the field of Microbiology and Immunology, including virology, parasitology, microbial genetics, immunology and medical bacteriology.
2. To introduce students to special projects and/or research opportunities in laboratories at the School of Medicine.
3. To provide laboratory experience for the development of skills required for the conduct of research.
4. To make students aware of current cutting edge research in the field of Microbiology and Immunology by attending seminars of speakers from within and outside the University.

DEGREE PROGRAMS

A Bachelor’s of Science degree is awarded to all microbiology and immunology majors upon completion of the requirements.

MAJOR

Minimum requirements are:

A. A total of 24 credits are required for the major: MIC 301 or MIC 303/304 and MIC 321 are required of all Microbiology and Immunology majors. The remaining 16 credit hours must be earned from: MIC 322, 323, 434, 436, 441, and 451-456. In addition, [BIL 352 or BIL 554] and/or [BIL 250 or BIL 255] and/or [GSC 310] may also be used. Honors students must take both the MIC 301 or MIC 303/304 and MIC 302.

B. Required courses are: Chemistry 111/113, 112/114, 201/205, 202/206; BIL 150/151, and 160/161; Biochemistry and Molecular Biology 401; Physics 101/106 and 102/108 or PHY 205, 206, 207, 208 and 209; two semesters of calculus including MTH 162 and one computer science or statistics course (CSC 120, CSC 210, MTH 224, PSY 204, SOC 211, EPS 553).
All MIC majors are required to have a minor (science or non-science). Students automatically get a CHM minor provided that they take one year of organic chemistry while in residence at UM.

Transfer students seeking a Microbiology and Immunology major must earn at least 10 credits taken in residence at UM beyond MIC 301 in the courses listed above for majors under A.

MINOR

A minor in Microbiology and Immunology consists of 12 credits. Eight for MIC 301 (or MIC 303/304), MIC 321 and at least four additional credit hours in the following courses: MIC 322, 323, 434, 436, and 441.

Variations in the above programs may, in special cases, be approved by the Microbiology and Immunology undergraduate advisor and Director. All courses in Microbiology and Immunology to be credited toward a Microbiology and Immunology major or minor must be completed with a grade of C- or better with an overall GPA of 2.0.

MIC courses 451-456 must have department Director approval before registration.

DEPARTMENTAL HONORS

See HONORS PROGRAMS elsewhere in this Bulletin for minimal requirements. In addition to the grade point averages specified in the minimal requirements, the following program constitutes the Microbiology and Immunology Honors Program.

1. Six credits of Special Projects carried out under supervision of a member of the Microbiology and Immunology faculty, culminating in a senior thesis that includes 15 references.

Microbiology and Immunology Course Listing
INTRODUCTION

The Army Reserve Officer Training Corps is a college elective that will help students succeed in their desired career, whether civilian or military. Students who complete all ROTC requirements may be commissioned second lieutenants and serve in the Army, Army National Guard or Army Reserve.

The military science department's Reserve Officers Training Corps (ROTC) program of instruction qualifies the student for a commission in the United States Army, Army National Guard, or United States Army Reserve. The curriculum does not provide technical training in a job specialty nor does it emphasize vocational training; rather, it complements and provides a base for normal progression in the commissioned officers' educational program.

Leadership and management objectives are included in academic periods of instruction. Practical leadership experience is gained in a field training environment by attendance at a 31-day summer camp, normally between the junior and senior years. Nursing students may attend a nursing internship at Army hospitals following the normal summer camp. A leadership laboratory also provides experience in a range of leadership positions during the school year. The department offers both a four-year and a two-year program, each with its own special advantages. Students are invited to visit or write the Department of Military Science to obtain additional information.

Core Program

The program requires four years of military science courses which consist of a two-year basic course and a two-year advanced course. Students can begin the four-year program as freshmen or as sophomores.

There is also a two-year ROTC program for those students with only two years of college remaining. The two-year course is designed for junior college and other non-ROTC college transfer students, but may be utilized by students who did not enroll in the basic course outlined below. Graduate students may also qualify for enrollment in the two-year course. Additional information regarding eligibility requirements for the two-year program may be obtained by contacting the Department of Military Science.

Women are encouraged to enroll and will be commissioned as officers in the United States Army upon completion of the ROTC curriculum. Job opportunities for women officers in the Army are the same as those for men, excluding a few combat arms fields.

Basic Course

The basic course is normally taken as an elective subject by students in their freshman and sophomore years. The purpose of this instruction is to qualify students for entry into the advanced course by familiarizing them with the organization of the Army, military skills, and military tradition. Students do not incur any military obligation as a result of enrolling in the basic course. Enrollment in ROTC requires proof of a doctor's physical screening.
Participation in regularly scheduled physical training is required. In addition to classroom instruction, a one and a half hour leadership laboratory period is required every other week.

**Advanced Course**

Instruction in the advanced course includes leadership and management, the exercise of command, military teaching methods, tactics, logistics, administration, history, and military justice. Leadership experience and command experience are provided by assigning advanced course students as cadet officers and noncommissioned officers. Participation in regularly scheduled physical training is a required part of the leadership training. Classroom instruction consists of two one and a quarter hour (75 minutes) periods each week and a two hour (120 minutes) leadership laboratory period every week. Only students who have demonstrated a definite potential for becoming competent officers will be selected for the advanced course.

**Army Nurse Corps Option**

Students enrolled in the School of Nursing curriculum leading to the degree of Bachelor of Science in Nursing may simultaneously qualify for commissions as Second Lieutenants in the Army Nurse Corps. Nursing students qualify for entry into the Officer Development Course through satisfactory completion of the General Military Course, the Basic Camp option or equivalent training. Nursing students participate in a summer Advanced Camp training program and an Army nurse training program. They provide practical and leadership experience in the clinical setting. The focus is to provide nursing cadets an experience which integrates clinical, interpersonal and leadership knowledge and skills. Emphasis is placed on practical experience under the direct supervision of an Army Nurse Corps Officer who acts as the cadet’s preceptor throughout the camp period.

**Professional Military Education**

In addition to basic and advanced ROTC courses, cadets must complete professional military education requirements consisting of one course in each of the following areas: written and oral communication skills, U.S. military history, and computer literacy. Students should consult with the professor of military science to determine those University courses suitable for fulfilling these requirements.

**Monetary Allowances**

Cadets selected for admission into the advanced course qualify for a nontaxable monetary allowance of $450–$500 per month for up to 20 months. Cadets may also qualify for the simultaneous membership program with the United States Army Reserve or National Guard, which can provide approximately $4,800 per semester during the last two years of school. Both the United States Army Reserve and the National Guard offer additional monetary incentives for cadets who join their organizations (drill pay).

**Army ROTC College Scholarship Program**

Financial assistance is available in the form of two- or three-year ROTC academic scholarships for selected students. Under the Army ROTC Scholarship Program, the students/cadets receive FULL Tuition and Fees. Additionally, Army scholarship recipients receive a flat-rate allowance of $1200 per year for textbooks and other expenses and $350–$500 per month stipend for up to 10 months per year. During the 32-day advanced course summer training between the junior and senior years, Army ROTC also pays attending
cadets $27 per day plus room and board. There are also numerous national and organizational scholarships that students may compete for as a member of Army ROTC. Once a student becomes a contracted scholarship recipient, they then become eligible to receive a grant from the University that equals one quarter tuition per year.

**Uniforms and Textbooks**

All uniforms and items of insignia incident to membership in the Army ROTC Program are furnished by the Department of Military Science. Textbooks are provided at no cost to students/cadets enrolled in the basic course.

**Special Activities**

Cadets have the opportunity to join and participate in a number of military affiliated organizations and activities, both on a voluntary and a selective basis. The Color Guard is a voluntary organization that functions as a military unit participating in military ceremonies and presenting the national colors at civic events. Cadets have the opportunity to qualify for and compete with cadets from other universities and colleges in a series of military events termed Ranger Challenge.

**Awards and Decorations**

Awards and decorations made available by national organizations, the University of Miami Army ROTC Alumni Association, and local and national military organizations, are presented to both basic and advanced officer course cadets each year. These plaques, trophies, medals, and ribbons symbolize superior achievement in Army ROTC and other University academic courses, and in outstanding campus and cadet corps leadership.

**Prerequisite for Admission to the Professional Officer Course**

1. Be at least 17 years of age at time of acceptance.
2. Be able to complete the professional officer course and graduate from the University of Miami prior to reaching the age of thirty (30) at the time of commissioning.
3. Selection by the professor of military science and acceptance by the University of Miami.
4. Execute a written agreement with the government to complete the professional officer course and accept an Army ROTC commission.
5. Enlist in the Army Reserve Component-ROTC (terminated upon receiving an Army officer commission).

Those students enrolled in the four-year Army ROTC program must complete the basic course or its equivalent, or have acceptable prior military service. Veterans and students with previous ROTC training are invited to write, visit, or call the Department of Military Science (305) 284-3329 or (305) 348-1619 to discuss their eligibility status.

Students desiring entry into the two-year Army ROTC program should contact the Department of Military Science one semester prior to the semester in which they wish to enroll in the professional officer course. This lead time is required to complete the application and a physical examination prior to enrollment in the professional officer course.
Leadership Laboratory

Leadership laboratory is open to students who are members of the Reserve Officer Training Corps or who are eligible to pursue a commission as determined by the professor of military science. Leadership laboratory is the formalized phase of leadership training conducted by the cadets. It is scheduled for two (120 minutes) hours every week for both the basic and advanced officer courses (non-contracted and contracted). All uniforms and equipment required for cadet activities are furnished.

EDUCATIONAL OBJECTIVES

To provide a base of knowledge in the areas of ethics, leadership, Communication skills, Military Leadership, U.S Military History, Tactics and Team building to include future Officer development.

DEGREE PROGRAMS

Students can receive degrees from the university in addition to being in the Army ROTC program, as well as being eligible (once requirements are met) to receive a minor in Military Science.

Military Science Course Listing
INTRODUCTION

The study of languages is integral to education in a global university. In addition to providing access to various cultural perspectives, multilingualism fosters success in business, economics, law, medicine, education, social sciences, politics, the arts, and humanities. Language study most effectively enriches academic as well as personal experiences when students choose a language based on its relevance to possible careers, to research in particular fields, to personal heritage, or to the understanding of unfamiliar cultures. At the University of Miami, students can choose courses in Arabic, Chinese, French, German, Haitian Creole, Hebrew, Italian, Japanese, Portuguese, and Spanish.

Many students combine advanced modern language study with majors in other fields. Students majoring in a modern language often choose second majors in programs such as International Studies, Communications, History, Political Science (and other pre-law fields), Biology (and other pre-med fields), English, Finance, Latin American Studies, Anthropology, Psychology, Computer Science, Sociology, and Philosophy.

The Department has Undergraduate Advisors for each language. You are encouraged to consult with them for placement, and must consult with them if you plan to major, minor, or study abroad (contact the Department office for names and office hours). If you plan to double major, you must have an advisor from each of your fields.

Students may qualify for a wide range of departmental awards for excellence in linguistic and literary achievement. The Modern Languages and Literatures Awards Reception takes place annually during graduation week. Some awards are conferred through nomination by professors; others require an application. Students may obtain information on specific awards in the Department office. The annual deadline for applications is usually in early March.

PLACEMENT GUIDELINE FOR MLL COURSES

Most students studying a second language can determine their appropriate level by following these guidelines:

- If you have not studied Arabic, Chinese, French, German, Hebrew, Italian, Japanese, or Spanish in high school, or have completed one to two years of high school instruction, take 101; for Portuguese, take 105.
- If you have taken 101 or its equivalent at another institution, take 102.
- If you have completed three years of high school instruction in French or Spanish, or scored a 3 on the AP language exam take 105. If you have had three years of high school Arabic, Chinese, German, Hebrew, Italian, or Japanese, take 102.
- If you have taken four years of high school French or Spanish, scored a 4 on the AP exam or a 4 on the IB exam in French or Spanish, or took the equivalent of 102 or 105 at another university, take 211. If you have taken four years of high school
German, Italian or Portuguese, take 211. If you have taken four years of Arabic, Chinese, Hebrew, or Japanese, take 201.

- If you had five to six years of high school French, German, Italian, or Spanish, take 212.
- If you have taken the equivalent of 211 at another university, or scored a 5 on the AP exam, you have completed your language requirement. If you wish to continue your studies, take 212.
- If you took the equivalent of 212 in French or Spanish at another university or scored a 4 on the AP literature exam, you have completed your language requirement. If you wish to continue your studies, take 214. If you took the equivalent of 212 in German, Italian or Portuguese at another university, you have completed your language requirement. If you wish to continue your studies, take 301.
- If you scored a 5 on the AP literature exam in French, Italian or Spanish, you have completed your language requirement. If you wish to continue your studies, take 301.

The Department offers courses open to native speakers of French, German, Italian, Portuguese, and Spanish. Native speakers may not enroll in 101, 102, 105, 201, 202, 211, 212, 214, or 301 in their language. If you are a native speaker of French, German, Italian, or Portuguese, and graduated from a high school where that was the official language of instruction, you may take any course above 301 (consult with the respective Undergraduate Advisor). If you are a native speaker of Spanish and graduated from a high school where that was the official language of instruction, your first SPA course at UM must be either SPA 302 or 303 or 343 (which is a prerequisite for other literature courses).

The Department of Modern Languages & Literatures identifies as heritage learners of Spanish those students who begin their university studies of the language with little or no prior instruction in Spanish but who, because of family background or social experience, can already understand much casual spoken Spanish and have a passive knowledge of the language (though they may not usually speak the language themselves). In the great majority of cases, they have been born and fully educated in the United States, and may have grown up speaking principally English (or a ‘mix’ of Spanish and English, i.e. 'Spanglish') in the home with their grandparents, parents and siblings. Heritage learners may or may not consider themselves as “bilinguals” or “native speakers”, since both of these terms carry very different connotations—linguistic, social, and psychological—for different individuals. Some state that they “do not really speak Spanish” even though they are able to comprehend much spoken language (i.e., they are “passive bilinguals”). In the great majority of cases, they self-identify as “Hispanic” or “Latino/a”.

**HERITAGE LEARNERS OF SPANISH MUST BE PLACED IN ONE OF THE FOLLOWING FOUR COURSES:**

**SPA 143 Basic Spanish for Heritage Learners** is for those students with little or no prior instruction in Spanish who, because of family background or social experience, can understand casual spoken Spanish and have a passive knowledge of the language although they do not usually speak the language themselves. Generally, their abilities to read and write Spanish are very weak. CLOSED TO STUDENTS WHO GRADUATED HIGH SCHOOL IN A SPANISH-SPEAKING COUNTRY.
SPA 243 Intermediate Spanish for Heritage Learners is for those students WHO HAVE ALREADY TAKEN AND PASSED SPA 143 or who have studied Spanish for AT LEAST TWO YEARS IN HIGH SCHOOL. They can understand casual spoken Spanish and have some functional ability in speaking, reading and writing the language. CLOSED TO STUDENTS WHO GRADUATED HIGH SCHOOL IN A SPANISH-SPEAKING COUNTRY.

SPA 244 Advanced Spanish for Heritage Learners is for those students who have studied Spanish for four years in high school and who have developed functional abilities in speaking, reading and writing the language. Students who earned a score of 5 on the AP Spanish Language Exam should register for this course. CLOSED TO STUDENTS WHO GRADUATED HIGH SCHOOL IN A SPANISH-SPEAKING COUNTRY.

SPA 343 Introduction to Literary Studies for Native/Heritage Speakers is intended for those students who have completed secondary and/or university studies in a Spanish-speaking country and for those heritage learners who demonstrate an advanced level of productive competence (in the written and spoken modes) in Spanish because of prior formal study of the language. Many heritage learners who place directly into 343 have taken AP Spanish literature in high school and earned a score of 4 or 5.

>>> SPA 101, 102, 105, 211, 212 AND 214 ARE NOT FOR HERITAGE LEARNERS. ANY HERITAGE LEARNER WHO ENROLLS IN ONE OF THESE COURSES WILL BE OBLIGATED TO SWITCH TO A HERITAGE LANGUAGE COURSE (SPA 143, 243, 244 OR 343) DURING THE FIRST WEEK OF CLASS.

Arts and Sciences Language Requirement
The College of Arts and Sciences requires all B.A. and B.S. degree students to show competency in a language other than English by successfully completing an approved college language course at the 200-level or higher. Students wishing to fulfill the language requirement in a language not taught at UM, may take the equivalent of a 300-level course or higher at an accredited institution and submit appropriate documentation for approval.

Humanities Literature and Writing Credits
The Department offers a variety of courses that fulfill these Distribution Requirements for students in most majors (please consult the guidelines of your School or College); students can easily fulfill some or all of these requirements by majoring or minoring in a modern language. Any literature courses in French, German, Italian, Portuguese or Spanish on the 300-level or higher fulfills a Humanities Literature requirement and counts as a writing credit. In addition, all 300-, 400- and all 500-level courses, unless otherwise specified, are for writing credit. NOTE: Courses may simultaneously fulfill the Humanities Literature Requirement and Writing Credit, or the Foreign Language Requirement and Writing Credit. A course cannot simultaneously fulfill the Foreign Language Requirement and the Humanities Literature Requirement.

DEGREE PROGRAMS
Students pursuing a single major in Arts and Sciences earn a BA.
MAJOR

Goals of the major: The major is designed to allow students to gain advanced linguistic, literary and cultural competence in the given language. Students will develop analytical and critical skills. They will learn to build coherent arguments orally and in writing; to develop tools for the interpretation of various texts; to perform research and write critical papers; to find and evaluate sources of information; to heighten their sensitivity to contexts of language, and to appreciate language as art. Students will also acquire a broad, structured knowledge of the history, literature and culture in the target language. Finally, they will learn to carry out cultural comparisons and to view their own culture with new eyes.

You do not have to be a student of the College of Arts and Sciences to major in a modern language; you need only the approval of your college or school advisor and to complete the departmental requirements. If you wish to complete a double degree, consult with an Arts and Sciences Advisor.

Students completing a major in a modern language are encouraged to study abroad. The International Education and Exchange Program (IEEP in Allen Hall, room 212) sponsors programs for Chinese, French, German, Italian, Japanese, Portuguese, and Spanish. It is also possible to fulfill some Arts and Sciences distribution requirements abroad. In order to take full advantage of study abroad, students should visit IEEP early in their university careers, discuss course equivalencies with the Study Abroad Advisor for their chosen languages (contact the Department office for names and office hours), and consult with their major advisors. Credit toward the major for courses taken abroad will be determined on an individual basis.

Majors in French, German, and Spanish

A major consists of at least 24 credits beyond 212/243, which must include the following distribution:

- at least 9 credits must be at the 300 level;
- at least 6 credits must be above the 300 level; of these, 3 credits must be at the 500 level (capstone course);
- Five writing intensive classes (W) in the department are required of all majors.
- Spanish majors must take one full 3-course sequence of survey courses in either Peninsular or Latin American Literature, or a combination of both that covers all three chronological periods. That is, Spanish majors must take 353 OR 363; 354 OR 364; and 355 OR 365.

Only one professional Spanish course (SPA 432 or SPA 433) will count towards the Spanish major, although students are free to take both. Students with transfer credits at the 300-level must take at least 21 graded credits at or above the 300-level at the University of Miami; i.e., up to 9 credits at the 300- and 400-level may be transferred from another institution or a study abroad program not administered by UM. Up to 12 credits taken abroad in a UM-administered program may count towards any of the majors in the Department. Students must earn a grade of C- or higher in every course counting toward the major, and maintain a minimum overall average of 2.5 in the major.

Capstone Courses

The final course in the major is the capstone course (501) which must be taken in residence. This course will:
• Integrate the various skills acquired during the course of study (linguistic, analytical, knowledge-based);
• Incorporate interpretive as well as presentational modes of communication;
• Contain an over-arching and cohesive theme;
• Include an element of collaboration among students.

It will constitute a moment of recapitulation of, synthesis, and reflection on a student’s experience in the major as well as a bridge towards graduate-level studies, should s/he decide to pursue them.

Of the 24 credits required for the major, a minimum of 12 credits must be earned in courses taught by MLL faculty (whether on campus or in faculty-led study-abroad programs). Since we encourage students to study abroad in UM-sponsored programs, up to 12 credits from these programs may be applied toward the major. Up to 6 transfer credits from other institutions may count toward the major; whether these are credits transferred from another U.S. institution or from non-UM study abroad programs, transferred credits must be granted UM equivalency in order to be eligible to count toward the major. Please note, however, that the total number of combined UM study-abroad (exclusive of MLL faculty-led programs) and transfer credits shall not exceed 12 credits.

For example:

  *A student may use 3 transfer credits with UM equivalency and 9 credits from a UM-sponsored study abroad program toward fulfillment of the major; the remaining 12 credits must be earned in courses taught by MLL faculty.
  *A student may use 6 transfer credits with UM equivalency and 6 credits from a UM-sponsored study abroad program toward fulfillment of the major; the remaining 12 credits must be earned in courses taught by MLL faculty.
  *A student may use 12 credits from a UM-administered study-abroad program not led by MLL faculty and 12 credits in courses taught by MLL faculty to fulfill the major.

Exceptions to this 12-credit rule may be made in cases where a student will participate in a UM-administered study-abroad program for a full academic year.

**MINOR**

You do not have to be a student of the College of Arts and Sciences to minor in a modern language; you need only the approval of your college or school advisor and to complete the departmental requirements. If you wish to complete a double degree, consult with an Arts and Sciences Advisor.

Students completing a minor in a modern language are encouraged to study abroad. The International Education and Exchange Program (IEEP in Allen Hall, room 212) sponsors programs for Chinese, French, German, Italian, Japanese, Portuguese, and Spanish. It is also possible to fulfill some Arts and Sciences distribution requirements abroad. In order to take full advantage of study abroad, students should visit IEEP early in their university careers, discuss course equivalencies with the Study Abroad Advisor for their chosen languages (contact the Department office for names and office hours), and consult with their major advisors. Credit toward the major for courses taken abroad will be determined on an individual basis.
Minors in French, German, Italian, Portuguese, and Spanish

A minor in one modern language consists of a minimum of 12 credits in that language, earned according to the following guidelines: a minimum of 9 credits must be at the 300 level and at least 6 of these credits must be graded credits taught by UM faculty. A maximum of 3 credits, out of the 12, may be transferred from another institution or from a study-abroad program not administered by UM. Students must earn a grade of C- or higher in every course counting toward the minor, and maintain a minimum overall average of 2.5 in the minor.

Minor in Modern Languages

The minor in two foreign languages consists of at least 24 graded credit hours with 12 credits in one language on any level and 12 credits in any other language, 6 of which must be on the 300-level or above. For example: Arabic 101, 102, 201 and 202 along with Spanish 212, 214, 301 and 322 would constitute a Minor in Modern Languages; so would French 212, 214, 301 and 332 along with Italian 101, 102, 211 and 212. Many other combinations are possible. This minor must include 6 graded credits per language from the University of Miami. Students must earn a grade of C- or higher in every course counting toward the minor, and maintain a minimum overall average of 2.5 in the minor.

Minor in Arabic Studies

A minor in Arabic Studies consists of a minimum of 15 credits, passed with a "C" or higher. Courses must be distributed as follows: 1) At least 3 credits in a 200-level Arabic language course (ARB201 or ARB202 or the equivalent); 2) At least 3 credits in ARB310 Topics in Arabic Studies in Translation; 3) At least 3 additional credits in any ARB course beyond ARB 101 (to reach a total of 9 ARB credits); 4) At least 3 credits, outside of ARB courses, in humanities or social science courses focused on the Middle East, North Africa, Islam, or the Arab world. For example: REL171, ARH260, INS352, GEG242, and POL387, or another relevant course as approved by the program director; 5) 3 additional credits from either an ARB course beyond ARB 101 or any approved course focused on the Middle East, North Africa, Islam, or the Arab world.

Up to 9 credits taken abroad in an Arabic-speaking country are eligible to fulfill the requirements for the minor. Up to 6 transfer credits from an accredited university or 4-year college in another region of the world are eligible to fulfill the requirements for the minor. In all cases, whether the credits are from a UM-affiliated study abroad program or transfer credits from any institution, the credits’ UM equivalency, if any, will be determined by the UM Arabic Studies Program Director; ARB 310 must be taken within the Department of Modern Languages and Literatures at UM; and the student must fulfill the distribution of requirements and other criteria stipulated above.

If a student has studied Modern Standard Arabic (fusha) in another setting (e.g., a high school foreign language program or schooling in an Arab country), she/he may request a proficiency evaluation from the Program Director. If the student’s Modern Standard Arabic is equivalent to, or beyond, the Intermediate level, the student may be exempted from the requirement to earn 3 credits in a 200-level Arabic language course; however, the student will still be required to take at least 9 credits of ARB courses and a total of 15 credits, as stipulated above, to complete the minor.
DEPARTMENTAL HONORS

Departmental Honors in Modern Languages are possible in the three languages for which the major is offered: French, German and Spanish. In order to request admission to Departmental Honors, candidates must have completed at least twelve credits at the 300 level or above. They must have a GPA of 3.5 in all their major courses and a 3.5 overall average GPA. Both GPAs must be maintained in order to graduate with Departmental Honors.

During their junior year, candidates for honors will identify an honors thesis supervisor and a second reader and request admission to Departmental Honors. Admission to candidacy must also be approved by the Director of Undergraduate Studies for the appropriate language.

In addition to fulfilling the regular major requirements, students must register in their Senior year for FRE or GER or SPA 594-595, Senior Honors Thesis. This is a two-semester, six credit sequence: 594 for research and 595 for the actual writing of the honors thesis.

The honors thesis advisor and the second reader will determine whether the finished thesis merits Departmental Honors.

Modern Languages and Literatures Course Listing

Course Listings for:

Arabic
Chinese
French
German
Haitian
Hebrew
Italian
Japanese
Portuguese
Spanish
INTRODUCTION

Neuroscience (NEUR) is the study of the nervous system (i.e., the brain, spinal cord, and peripheral nerves), the mechanisms of behavior, and the nature of mind and consciousness. The Neuroscience major is a rigorous, interdisciplinary major offered by the Departments of Biology and Psychology in conjunction with the Neuroscience Program at the Miller School of Medicine. This major is intended for students preparing for medical school or for graduate study in such fields as neuroscience, biology, neuroscience, psychology, or behavioral medicine.

EDUCATIONAL OBJECTIVES

The Neuroscience major seeks to provide undergraduate students with exposure to and a fundamental understanding of the neural and biobehavioral sciences. It seeks to deliver an integrative educational experience by promoting interactions among faculty, graduate students, and undergraduate students in basic scientific inquiry, advising, and mentoring.

DEGREE PROGRAMS

Neuroscience is offered as a major only for the Bachelor of Science degree within the College of Arts and Sciences.

MAJOR

The total number of credit hours for the Neuroscience major is 49, distributed between the Departments of Psychology, Biology, and Neuroscience (as indicated below). The requirements for the Neuroscience major meet most of the general requirements for many medical schools.

A grade of C- or better is required in all courses to count toward the major core requirements, electives, or auxiliary courses and/or to serve as prerequisites for other courses. Students moving on to a course without the prerequisites will be dropped from the course.

The total number of credits for the degree with a Neuroscience major is 130.

There is one formal track available in the Neuroscience major. However, students can choose their electives to reflect their primary interests in either psychobiology (which emphasizes cognitive functions and behavior) or neurobiology (which emphasizes cellular and molecular approaches to understanding nervous system functions).
Core Courses

All Neuroscience majors must complete a set of core courses from Biology, Psychology, and Neuroscience. These are BIL 150/151, (or BIL 152), BIL 160/161, (or BIL 162), BIL 268, BIL 250, BIL 255, PSY 110, PSY 204*, and PSY 316, and PSY 402; and NEU 342 and NEU 403.

*UM alternates to PSY 204 include, BIL 311; SOC 211 and 212; and MTH 224. These courses are acceptable as prerequisites for PSY 316, but do not count toward the major. Thus, students opting to do these alternate courses must take another course in Psychology to total the number of credits expected for the major.

Electives

Electives in for the Neuroscience major are limited to specific courses pertinent to the major. Requirements and options are outlined below.

Choose 3 elective credits in Neuroscience from NEU 465 or an alternate course approved ahead of time by the Director of Undergraduate Studies in Psychology.

Choose 3 electives in Psychology and 3 elective credits in Biology from the list below OR choose 6 credits in Biology from the list below. Note: students interested in psychobiology should take the first option, those interested in neurobiology should choose the latter.

Choices in Psychology are limited to PSY 305, PSY 332, PSY 352, PSY 420, PSY 440, and PSY 444.

Choices in Biology are limited to BIL 210, BIL 215, BIL 241, BIL 261, BIL 330, BIL 345, BIL 355, BIL 360, BIL 365, BIL 369, BIL 511, BIL 520, and BIL 540. Biochemistry (specifically, BMB 401 or BMB 506) OR MIC 301, may also be substituted and count as a Biology elective.

Auxiliary courses

In addition to the above courses in Biology, Psychology, and Neuroscience all Neuroscience students must complete 16 credits in Chemistry including CHM 111/113 and CHM 112/114, and CHM 201/205 and CHM 202/206; 8 credits in Math including MTH 141/162 OR 161/162 or MTH 171/172; 10 credits in Physics including PHY 101/106 and PHY 102/108. (A 200-level, calculus-based physics sequence [PHY 205/206/207/208/209] can be substituted for the 100 level physics sequence and is highly recommended for any student considering pursuing Neuroscience at the Ph.D. level.) PRISM students may count the PHY 201/106 and PHY 202/108 sequence.

Grades and Scores Required to Declare and Continue

A student must have an SAT score of 1300 or above or an ACT of 30 or above to declare Neuroscience as an incoming freshman.

Thereafter, students need a 3.5 GPA after 24 credits at UM to declare the major. At least 7 of these 24 credits must have been in a BIL, CHM, or MTH course designed for majors.

Students transferring from another college or university must have a cumulative grade point average of 3.8 or above; at least 7 of these credits must have been taken in a BIL or CHM course designed for majors.
Students are strongly advised not to continue as a Neuroscience major if, after having completed 15 credits in the major, the GPA is less than 2.8. This shall include all courses in the major and in the auxiliary courses, whether listed under the major on the ACE or not. Students may repeat no more than two courses (in different disciplines) for the major or the auxiliary courses in which they have received a D or an F.

**Grades Required to Graduate**

A grade of C- or better is required in all courses applied to the Neuroscience major, and the GPA in these courses must be at least 2.6. Included in this GPA are courses in Biology, Psychology, Mathematics, Chemistry, and Physics.

**MINOR**

All Neuroscience majors must choose a minor from among Biochemistry and Molecular Biology, Chemistry, Computer Science, Engineering, Geological Sciences, Mathematics, Microbiology and Immunology, or Physics. Neuroscience students automatically earn a Chemistry minor if they complete the year of Organic Chemistry (CHM 201 and CHM 202) with labs (CHM 205 and CHM 206) here at UM.

Neuroscience majors may have additional minors in either science or non-science disciplines. Neuroscience majors may not earn minors in Biology or Psychology.

There is no minor in Neuroscience.

**ADVISING**

The Neuroscience major is administered by the Department of Psychology's Undergraduate Academic Services for Psychology (UASP). The Director of Undergraduate Studies for Psychology is the primary advisor for all Neuroscience majors. For curricular advice and for course and transfer approval, etc., students may also consult an advisor UASP, Flipse, Room 508.

Dr. Phillip McCabe is Professor of Psychology and the Director of the Neuroscience program. pmccabe@miami.edu

Dr. Victoria Noriega is the Director of Undergraduate Studies in Psychology and Advisor for Neuroscience majors. vnoriega@miami.edu

**Freshmen**

All freshman-declared Neuroscience majors receive their advising as a part of a year-long advising, orientation, and mentoring program known as FACT FORUM. All incoming majors will be placed in a special University Experience section known as FACT (Freshman Advising Contact Term). This is a one credit general elective course designed to integrate freshmen into the major by familiarizing them with the guidelines, opportunities, and responsibilities of a Neuroscience major. During the second semester, freshmen enroll in a FORUM section (Faculty Overview of Research and Undergraduate Mentoring). This one credit general elective course helps to put the curriculum in context and stresses the importance of and
opportunities for research. Advising for the Spring and Fall semesters is also done in these courses. These courses are mandatory for all incoming Neuroscience majors.

Students wishing to declare a Neuroscience major after matriculation may be required to take part in an advising seminar prior to declaring the major.

Research Participation in PSY 110

As an introduction to behavioral science, students enrolled in PSY 110 may be required to participate as subjects in research studies being conducted by faculty and/or graduate students, or by reading and writing about selected research reports. For details, consult the course syllabus and/or contact the Psychology Department’s Undergraduate Academic Services for Psychology.

Residency Requirement

Neuroscience majors must complete all upper division Biology and Psychology courses at U.M. With prior Departmental approval, 6 of these 15 credits may be completed through the U.M. Study Abroad Program. UM’s UGalilee program offers opportunities for Neuroscience majors to complete BIL 250 and BIL 255 as part of their study abroad curriculum.

Research Experience for Course Credit

Research is considered integral to the Neuroscience major. Students may earn course credit (NEU 367, NEU 368, NEU 498, or NEU 499) to be applied toward the degree (but not toward the major), by working in a research laboratory of an approved UM faculty member.

Students wishing to do research with a neuroscientist on the medical campus should speak with the Director of the Neuroscience program. Before registration, written permission from the faculty mentor and the Director of Undergraduate studies in Psychology is required. Students may also volunteer in a research laboratory: Necessary forms must be completed before working in the lab.

Course Prerequisites

Students who have not taken a prerequisite course (or who have taken it and obtained a grade below C-) may not enroll in the course for which it is a prerequisite. Students enrolled without prerequisites may be dropped from the class roll.

Transfer courses

Transfer students wanting courses taken elsewhere to count as Neuroscience courses at U.M. must obtain written approval during their first semester at UM. This is a separate process from the Admissions Evaluation of Transfer Credit.

Regularly enrolled UM students wishing to take a Biology, Psychology, or Neuroscience course elsewhere (e.g., during the summer) must obtain prior written approval from the appropriate department if they wish it to be counted in place of a UM course. In some cases, transfer courses not approved as part of the major may still count in another discipline or as an elective.
Senior Assessment

Seniors may be required to take part in a senior assessment lasting up to four hours. Department self-assessment is mandated by SACS (The Southern Association of Colleges and Schools) and is a necessary part of accreditation. These scores will not affect the student’s graduation status.

DEPARTMENTAL HONORS

Honors in Neuroscience entails excellence in both regular classes and completion of the Senior Honors Thesis, (usually NEU 498 and NEU 499), an individual research project done under the direction of a UM faculty member. Eligibility requirements for Honors in Neuroscience include a 3.3 cumulative GPA and a 3.5 Neuroscience GPA and usually one year of previous research with the faculty mentor.

Prior to enrolling in NEU 498 and NEU 499, students must have completed PSY 316 and must obtain written approval from both the faculty mentor who will supervise the thesis and the Director of Undergraduate Studies in Psychology. These faculty members will also assess the adequacy of the thesis upon completion.

Students are expected to complete the Thesis course sequence; a grade of “IP” (i.e., incomplete in progress) is given for NEU 498 until NEU 499 is completed and approved by the Director of Undergraduate Studies in Psychology.

Neuroscience Course Listing
PHILOSOPHY - Dept. Code: PHI
www.as.miami.edu/phi

INTRODUCTION

The Philosophy Department offers a wide range of courses at the undergraduate level which cover every major area of philosophy as well as its history. Students can major or minor in the subject. In addition, the department sponsors two undergraduate philosophy organizations: the Philosophy Club, which is open to all UM undergraduates, and Phi Sigma Tau, a chapter of the National Honor Society in Philosophy. Both groups afford students regular opportunities to meet, eat, and talk philosophy with each other and with graduate students and faculty in the department. All undergraduates who are interested in philosophy are welcome to participate in these philosophical events.

EDUCATIONAL OBJECTIVES

Philosophy is the study of the most basic moral, scientific, legal, aesthetic, religious, and metaphysical concepts and theories by which we understand ourselves and our universe. It is a reasoned pursuit of fundamental truths, a quest for understanding, a study of principles of conduct. It analyzes the basic assumptions and concepts of other disciplines and the norms that govern interpersonal relations and the acquisition of knowledge. It seeks to establish standards of evidence, to provide rational methods of resolving conflicts, and to create techniques for evaluating ideas and arguments. Philosophers are dedicated to developing the following abilities: reasoning clearly, distinguishing between good and bad arguments, thinking through complicated questions, and using reason in situations that are often governed by emotions. Studies have shown that philosophy majors do extremely well on standardized tests, and in careers that require analytical abilities such as the practice of law and software development. But irrespective of career choice, philosophy deepens one's sense of the meaning and varieties of human experience, and enhances self-knowledge, foresight, and sense of direction in life.

DEGREE PROGRAMS

The major in Philosophy leads to the degree of Bachelor of Arts.

MAJOR

A major in philosophy consists of a minimum of ten courses, each passed with a grade of C- or higher, with an overall GPA of 2.0. Elective courses may be chosen to fit individual needs. Required courses for the major are Philosophy 210 or 215, either 271 or 272, twelve credits at the 300 level (including one course from 330-332 and two courses from 340-345), and six credits at the 500 level.

MINOR

A minor in philosophy consists of a minimum of five courses, each passed with a grade of C- or higher with an overall GPA of 2.0. At least three of the courses must be at the 200 level or above, and at least one of these three courses must be at the 300 level or above.
The major and the minor should be planned with the advice of the department.

**PRE-LAW MAJOR AND MINOR TRACKS**

The Department offers major and minor tracks for students wishing to enhance their Pre-Law studies with relevant Philosophy coursework.

A Pre-Law Major Track in Philosophy consists of a minimum of ten courses, each passed with a grade of C- or higher, with an overall GPA of 2.0. Required courses for the track are either 210 (Formal Logic) or 215 (Logic and Law), either 271 or 272 (1 course in history of philosophy), either 330 (Ethics) or 331 (Social and Political Philosophy), either 332 (Philosophy of Law) or 333 (Philosophical Foundations of Criminal Law), two of either 340 (Epistemology), 341 (Philosophy of Language) or 343 (Philosophy of Science), 2 500-level courses, and any 2 additional PHI courses.

A Pre-Law Minor Track in Philosophy consists of a minimum of five courses, each passed with a grade of C- or higher, with an overall GPA of 2.0. Required courses for the track are either 210 or 215, either 330 or 331, either 332 or 333, one of either 340, 341 or 343, and any other PHI course.

**PRE-MED MAJOR AND MINOR TRACKS**

The Department also offers major and minor tracks for students wishing to supplement their Pre-Med work with relevant Philosophy coursework.

A Pre-Med Major Track in Philosophy consists of a minimum of ten courses, each passed with a grade of C- or higher, with an overall GPA of 2.0. Required courses for the track are 210 (logic), either 271 or 272 (1 course in history of philosophy), 330 (Ethics), 334 (Biomedical Ethics), 343 (Philosophy of Science), either 340 (Epistemology) or 344 (Philosophy of Mind), and 546 (Knowledge and Evidence in Medicine). Elective courses consist of one 500-level philosophy course and 2 other philosophy courses not listed above.

A Pre-Med Minor Track in Philosophy consists of a minimum of five courses, each passed with a grade of C- or higher, with an overall GPA of 2.0. Required courses for the track are 210, 334, 343, either 340 or 344, and 546.

**DEPARTMENTAL HONORS**

A program of work toward graduation with Honors in Philosophy is available for qualified students. Interested students should consult the Departmental Director of Undergraduate Studies during their sophomore or junior years. Further information may be found under the section entitled HONORS PROGRAM.

For requirements leading to the Master of Arts and Ph.D. degree, see the Bulletin of the Graduate School.

[Philosophy Course Listing](#)
PHYSICAL SCIENCES - Dept. Code: PSC

INTRODUCTION

Physical Science 101 is an interdisciplinary physical science course designed primarily for the non-science major. It may be used to satisfy a physical science requirement in some degree programs. Students should consult the degree requirements listed elsewhere in the Bulletin as well as their advisors for the appropriateness of this course for their programs. See also under PHYSICS 110.

Physical Sciences Course Listing
INTRODUCTION

The requirements for a major or minor in the Department of Physics are flexible and may be adapted to the needs of the individual student:

MAJOR

1. Pure Physics

This sequence is recommended for those intending to enter a graduate school in Physics. It consists of a minimum of 34 credits in Physics at or above the 200 level, including four credits of laboratory and the courses PHY 205, 206, 207 (or 205, 210); 360, 362; 340, 321; 350, 351; 540, 560. The physics minor consists of University Physics, two credits of laboratory work, PHY 360, another 3-credit physics lecture course (other than PHY 315) at the 300-level or above.

2. Marine Science/Physics

This is one of the interdisciplinary majors offered in conjunction with RSMAS. It includes 31 credits from the core physics courses through PHY 560 together with a group of marine science and other courses detailed in the section of this Bulletin on MARINE SCIENCE.

3. Applied Physics

This sequence is available for those intending careers in applied physics, and consists of 22 credits in Physics plus nine credits of Engineering and Computer Science courses with prior approval of the Department of Physics. The Physics courses must be at or above the 200 level and include three credits of laboratory. The major includes PHY 205, 206, 207 (or 205, 210), 208, 209, 340, 350, 360.

4. Dual Physics Majors

Physics requirements: PHY 205, 206, 207 (or 205, 210), 208, 209, 360 and at least two of the following: PHY 321, 340, 350, 351, 560. In the total of 22 credits of physics, 2 or 3 credits of advanced lab may be included, or another lecture course.

Students will have the full, normal major in Biology or Chemistry and provided that among those courses certain specific ones are included, they will also be able to have the dual major in physics. The specific courses are

Biology – Physics

Three of the courses BIL 358, 554, CHM 360, 365

Chemistry – Physics

Three of the courses CHM 360, 365, 565, BIL 358.
Note: Depending on the selection of the Physics courses in the Biology and Chemistry dual majors, more mathematics beyond two semesters of calculus is required for most of the physics courses.

5. Students in the College of Engineering who want a dual major in physics should consult the Physics Department Chairman. A major tailored to the student’s needs will be arranged. The minimum number of physics credits is the same as for the Applied Physics major.

In order to complete any Physics major sequence in four years, the student should begin elementary calculus in the first semester. The recommended mathematics sequence is MTH 151 or 161, 162 (or 171, 172); (310 or 211), 311; 210; (230, 433, 461, 510, 512 also recommended).

A grade of C- or better is required in all courses counted toward the major or minor with an overall GPA of 2.0. Any lecture course in the Physics department may be passed by means of a proficiency examination.

Requirements for the Master of Science and Doctor of Philosophy degrees will be found in the Bulletin of the Graduate School.

**MINOR**

The physics minor consists of University Physics, two credits of laboratory work, PHY 360, and another 3 credit physics lecture course (other than PHY 315) at the 300-level or above.

[Physics Course Listing](#)
INTRODUCTION

A political science major prepares students for work in a number of fields including law, politics, public policy, public administration, and international affairs, as well as employment in business and the non-profit sector.

EDUCATIONAL OBJECTIVES

Political science majors gain an understanding of American political and legal life, the workings of other countries’ political and economic systems, the relations among countries in the international arena, and key concepts in both political philosophy and social science methodology.

DEGREE PROGRAMS

Bachelor of Arts in Political Science

Five year program: Bachelor of Arts in Political Science and Masters of Public Administration

A special curriculum for students specializing in public administration enables them to complete the requirements for a Bachelor’s and Master’s degree in five years.

MAJOR

The political science major consists of at least 30 credits. At least 21 credits of these must be earned at the University of Miami.

To count toward the major, each course must be completed with a grade of C- or above, with an overall GPA of 2.0 or above.

1. Nine credits must be taken in departmental core courses, namely, POL 201, POL 202, and POL 203. POL 213 does not count toward the major.

The remaining credits must meet the following distributional requirements:

2. At least six of the credits must come from 500-level seminar courses offered by the University of Miami. This includes any 500-level seminar offered by the Department of Political Science or cross-listed with Political Science. The following 500 level courses are not seminars and do not fulfill this requirement:

   POL 520  Internship
   POL 521  Public Affairs Internship
   POL 563  Senior Thesis (I)
   POL 564  Senior Thesis (II)
POL 599 Directed Readings
(Note that POL 599: Special Topics is a seminar and does fulfill this requirement.)

3. At least one course above the 200-level must be taken in three of the following five principal sub-fields of political science:

American Politics
Comparative Politics
International Relations
Public Administration, Policy, and Law
Political Theory and Methods

These can include courses used to fulfill requirement #1 above. Please note that some courses cover more than one sub-field Students may not, however, use a single class to fill two sub-field requirements

American Politics:

POL 309 American Political Thought
POL 311 Conspiracy Theories
POL 313 The Constitution
POL 314 Legislative Process
POL 315 American Presidency
POL 332 Mass Media and Politics
POL 334 Campaigns
POL 335 Local Government
POL 342 State and Local Government and Politics
POL 343 Government in Metropolitan Areas
POL 349 U. S. Defense Policy
POL 351 Public Opinion
POL 352 Political Parties
POL 353 Interest Groups and Lobbying
POL 354 The CIA and the World of Intelligence
POL 360 Congressional Representation
POL 408 The 2008 Election
POL 515 Media Content Analysis
POL 528 Advanced Seminar on Electoral Behavior
POL 529 Conducting U.S. Elections
POL 530 Intelligence and National Security Decision Making
POL 536 U.S. Health Care Crisis: Politics and Policies
POL 540 Problems in American Foreign Policy
POL 542 American Constitutional Development
POL 543 Urban Politics
POL 547 Congressional Representation
POL 548 Civic Participation and Democracy
POL 550 Advanced Seminar on American Politics
POL 552 Politics and Group Perspectives
POL 553 The Environmental Movement: Groups, Beliefs and Values
POL 599 Special Topics: Congress, the President, and Spending
POL 599 Special Topics: Conducting U.S. Elections
POL 599 Special Topics: Legislative and Judicial Seminar
POL 599 Special Topics: The Politics of Civil Rights
Other POL 599: Special Topics classes may count as an American Politics course. See the Director of Undergraduate Studies for questions about POL599 courses not listed in the Bulletin.

Comparative Politics:

POL 308 Security, Globalization, and Human Rights
POL 323 Global Warming Politics and the European Union
POL 344 Gender and Politics
POL 380 Comparative Political Analysis
POL 381 European Governments and Politics
POL 382 Government and Politics of the Federal Republic of Germany
POL 384 Postcommunist Russian Politics
POL 385 Politics and Society in Latin America
POL 386 Democratic Consolidation
POL 387 Politics of the Middle East
POL 388 Politics of Israel
POL 525 Comparative Public Policy and Administration
POL 531 Global Environmental Politics
POL 534 War Crimes Tribunals
POL 535 Comparative Legal Systems
POL 579 Ethnicity, Nationalism, and Secession
POL 580 The Politics of Post-Communist Transitions
POL 581 Comparative Political Economy of Post-Industrial Democracies
POL 582 Political Economy Development
POL 584 Contemporary Latin American Politics
POL 588 Politics in China

Other POL 599: Special Topics may count as a Comparative Politics course. See the Director of Undergraduate Studies for questions about POL599 courses not listed in the Bulletin.

International Relations:

POL 308 Security, Globalization, and Human Rights
POL 323 Global Warming Politics and the European Union
POL 337 International Law
POL 345 The United States and Asia
POL 346 U. S.-Latin American Relations
POL 347 American Foreign Policy
POL 348 United States Relations with the Middle East
POL 349 U. S. Defense Policy
POL 391 Topics in International Relations
POL 392 International Terrorism
POL 530 Intelligence and National Security Decision Making
POL 531 Global Environmental Politics
POL 540 Problems in American Foreign Policy
POL 544 Chinese Foreign Policy
POL 570 Uniting States in International Perspective
POL 577 Security in South Asia
POL 579 Ethnicity, Nationalism, and Secession
POL 586 Conflict in the Middle East and Africa
POL 591 Problems in International Politics and Organization
POL 592  International Political Economy  
POL 593  International Relations of the Middle East  
POL 599  Special Topics: Counterinsurgency Warfare  
POL 599  Special Topics: Security in the Black Sea and the Caspian  
POL 599  Special Topics: Security in South Asia  
POL 599  Special Topics: Security, Globalization, and Human Rights  

Other POL 300 or POL 599: Special Topics courses may count as an International Relations course. See the Director of Undergraduate Studies for questions about POL 300 and POL 599 courses not listed in the Bulletin.  

Public Administration, Policy, and Law:  

POL 300  Growth Management  
POL 321  Public Policy and Administration  
POL 322  Environmental Politics and Policy  
POL 336  Politics of Crime  
POL 337  International Law  
POL 372  Introduction to Criminal Justice  
POL 373  Constitutional Law I  
POL 374  Constitutional Law II  
POL 375  Supreme Court Issues  
POL 376  Discrimination and the Law  
POL 377  Constitutional Law III  
POL 396  Policy for Urban Systems  
POL 501  Budget and Financial Management and Administration  
POL 522  Introduction to Graduate Public Administration  
POL 523  Problems in Public and Non-Profit Management  
POL 524  Non-Profit Organizations: Law, Policy, and Management  
POL 525  Comparative Public Policy and Administration  
POL 526  Administrative Law  
POL 533  Courts and Controversy  
POL 534  War Crimes Tribunals  
POL 535  Comparative Legal Systems  
POL 536  U.S. Health Care Crisis: Politics and Policies  
POL 537  The Law and Politics of Sports  
POL 541  Philosophy of Law  
POL 542  American Constitutional Development  
POL 545  Environmental Policymaking  
POL 546  Public Policy  
POL 551  Productivity in the Public and Non-Profit Sectors  
POL 554  Social Welfare Policy  
POL 555  Total Quality Public Service Management: Achieving High Performance Government  
POL 556  Political Ethics  
POL 557  Ethical Issues in Government  
POL 558  Digital Technology and Electronic Government  
POL 569  Politics, Law and Sexual Identity  
POL 599  Special Topics: Digital Technology and Electronic Government  
POL 599  Special Topics: Public Project Management & Procedures
Other POL 599: Special Topics courses may count as a Public Administration, Policy, and Law Course. See the Director of Undergraduate Studies for questions about POL599 courses not listed in the Bulletin.

Political Theory and Methods:

POL 250     Scope and Methods in Political Science
POL 305     Introduction to Political Theory
POL 306     Positive Political Theory
POL 307     Political Ideologies
POL 309     American Political Thought
POL 310     God, Science, and Politics
POL 311     Conspiracy Theories
POL 380     Comparative Political Analysis
POL 510     Political Analysis
POL 512     Advanced Political Analysis
POL 513     Models of Politics
POL 515     Media Content Analysis
POL 541     Philosophy of Law
POL 599     Introduction to Game Theory
POL 599     Ideals and Realities

Other POL 599: Special Topics courses may count as a Political Theory and Methods class. See the Director of Undergraduate Studies for questions about POL599 courses not listed in the Bulletin.

MINOR

A minor requires 15 credits of political science, three of which must be from POL 201, 202, or 203. To qualify for the minor at least 9 credits must be earned in residence.

To count toward a minor, each course must be completed with a grade of C- or higher, with an overall GPA of 2.0 or higher. **POL 213 does not count toward the minor.**

DEPARTMENTAL HONORS

To earn Departmental Honors a student must:

1. Graduate with an overall GPA of 3.500.
2. Graduate with a political science GPA of at least 3.700.

[Political Science Course Listing](#)
PSYCHOLOGY - Dept. Code:  PSY  
www.psy.miami.edu

INTRODUCTION

Psychology is the study of how individuals think, behave, feel, and relate to others. Because of its broad and fundamental nature, coursework in psychology is useful to students pursuing any liberal arts major. Psychology is a good major field of study for individuals who are preparing for post-graduate study in psychology or related fields such as counseling, guidance, or social work. It is also an appropriate field of study for students pursuing medicine, law, or business.

Psychology courses meet the general education requirements in the Social Sciences (People and Society). Although the vast majority of Psychology majors are enrolled in the College of Arts and Sciences, Psychology often serves as a second major for students in the School of Communication, the School of Education, the School of Nursing, etc.

While most majors sample broadly from among the Department’s offerings, students wishing to focus on a specific sub-area may select courses to provide a strong (though unofficial) specialization. There are, for instance, clusters of courses in child development, research methodology and the brain-behavior relationship that provide a basis for such a specialized major.

EDUCATIONAL OBJECTIVES

The Department of Psychology seeks to provide undergraduate students with exposure to and a fundamental understanding of the psychological sciences. It seeks to deliver an integrative educational experience by promoting interactions among faculty, graduate students, and undergraduate students in basic and applied psychological inquiry, advising, mentoring, and community outreach.

DEGREE PROGRAMS

The Department of Psychology offers both a Bachelor of Arts (B.A.) and a Bachelor of Science (B.S.) degree. In addition to completing the coursework for the particular degree specified by the College of Arts and Sciences, students must also meet the departmental requirements for each degree; these are described below.

Students in the School of Communication or the School of Education wishing to receive a major in Psychology must fulfill the departmental requirements for the Bachelor of Arts Psychology major track, in addition to their school’s degree and major requirements.

MAJOR

B.A.  Departmental Requirements

The B.A. in Psychology entails 30 credits in Psychology, including PSY 110. Students must also successfully complete a course in research design/statistics PSY 204*
(which counts toward the major and serves as a prerequisite for advanced methods
courses). Also required are 9 Psychology credits at the 300 level or higher and 6
additional credits at the 400 level or higher.

Students wishing to pursue careers in business, education, law, human resources,
religion, social work, or other related fields often choose the B.A. degree. When it
includes research-oriented courses such as PSY 204, PSY 316, PSY 418, and research
experience, the B.A. is also appropriate for students aspiring to graduate study in
many areas within Psychology. B.A. Psychology majors must choose one minor from
the list of minors published by the College of Arts and Sciences.

B.S. Departmental Requirements

The B.S. Psychology major entails 33 credits in Psychology, including PSY 110, PSY
204*, PSY 316, and PSY 418, plus 3 additional credits at the 300 level or higher and
6 additional credits at the 400 level or higher.

Psychology majors aspiring to graduate study in Psychology and related fields often
pursue the B.S. degree, as do students planning to attend medical school. B.S.
Psychology majors must elect a minor from among the following: Biochemistry,
Biology, Chemistry, Computer Science, Geology, Engineering, Mathematics, Microbiology and Immunology, or Physics.

*UM alternates to PSY 204 include BIL 311; SOC 211 and 212; and MTH 224.
These courses are acceptable as prerequisites for PSY 316, but do not count
toward the psychology major. Thus, students opting to do these alternate
courses must take another course in Psychology to total the number of credits
for that major.

Grades Required to Declare and Continue

A student must have an overall and Psychology GPA of at least 2.5 to transfer from another
major to Psychology, to declare Psychology as a second major, to change from Undeclared
status to a Psychology major.
Students transferring from another college or university must have cumulative and PSY
GPAs of at least 2.8.

Students are strongly advised not to continue as a Psychology major if, after having
completed 15 credits in Psychology, the Psychology GPA is less than 2.5 (this shall include
all courses taken in the major, not just the ones listed under the major). Additionally, at
least a C- must be earned in the MTH prerequisites prior to enrolling in PSY 204.

Grades Required to Graduate

A grade of C- or better is required in all courses applied to the Psychology major, and the
GPA in these courses must be at least 2.3.

MINOR

All Psychology majors must have a minor in another discipline. See above for the
stipulations pertaining to the B.A. and the B.S. degrees with a major in Psychology.
The minor in Psychology requires 15 credits in Psychology, with a grade of C- or better and a GPA of 2.0 or better for these 15 credits. No more than 3 of these credits may be in courses having no prerequisite, and no more than 3 credits may be in research courses (e.g., PSY 367). Of the 15 credits, 9 must have been completed at UM; with prior approval, 3 of these 9 credits may be taken through the UM Study Abroad Program.

**ADVISING**

The office of Undergraduate Services for Psychology (UASP) provides comprehensive advising services for all Psychology majors, minors, and those aspiring to become a major or minor. For curricular advice and for course transfer and approval, etc., students should consult an advisor in UASP. Flipse, Room 508.

Dr. Victoria Noriega is the Director of Undergraduate Studies in Psychology. vnoriega@miami.edu

Mr. Sean Kilpatrick is the Associate Director of Advising in UASP. smkilpatrick@miami.edu

**Freshmen**

All incoming freshmen declared Psychology majors in the College of Arts and Sciences receive their advising as a part of a year-long advising, orientation, and mentoring program known as FACT FORUM. All will be placed in a freshman experience section of FACT (Freshman Advising Contact Term). This is a one credit general elective course that is designed to integrate freshmen into the department by familiarizing them with the guidelines, opportunities, and responsibilities of a Psychology major. During the second semester, freshmen enroll in a FORUM section (Faculty Overview of Research and Undergraduate Mentoring). This one credit general elective course helps to put the curriculum in context, and stresses the importance of and opportunities for research. Advising for Spring and Fall semesters are also done in these courses. These courses are mandatory for all incoming Psychology majors.

Students wishing to declare a Psychology major after matriculation may be required to take part in an advising seminar prior to declaring the major.

**Research Participation in PSY 110**

As an introduction to behavioral science, students enrolled in PSY 110 may be required to participate as subjects in research studies being conducted by faculty and/or graduate students, or by reading and writing about selected research reports. For details, consult the course syllabus and/or contact the Department’s Undergraduate Academic Services for Psychology. Note: This introductory research participation requirement, by itself, is not sufficient for students interested in attending graduate school in psychology. See Research for Course Credit, below

**Residency Requirement**

Psychology majors must complete at least 15 upper division (300 level and above) Psychology credits in residence at UM. Additionally, the last 15 credits must be completed at UM. With prior departmental approval, 6 of these 15 may be completed through the UM Study Abroad Program.
Research Experience for Course Credit

Research is considered integral to the Psychology major. Students may earn course credit (PSY 367, PSY 368, PSY 498, and PSY 499) by working in the laboratory of a faculty member in or approved by the Department of Psychology. Before registration, written permission from the faculty mentor and the Director of Undergraduate Studies in Psychology is required. Students may also volunteer in a research laboratory: Necessary forms must be completed before working in the lab.

No more than 6 research credits (i.e., PSY 367/8 and PSY 499) may count toward the major. PSY 498 does not count toward the major or minor. Additional research credits may count toward general electives.

Course Prerequisites

All courses beyond the 100-level require students to have taken the introductory or foundation course PSY 110 or an equivalent approved by the Department of Psychology. Students who have not taken a prerequisite course (or who have taken it and obtained a D or F) may not enroll in the course for which it is a prerequisite. Students without prerequisites may be dropped from the class roll.

Transfer courses

Transfer students wanting courses taken elsewhere to count as Psychology courses at UM must obtain written Departmental approval during their first semester at UM. This is a separate process from the Admissions Evaluation of Transfer Credit. No more than one course at the 100 level (i.e., without a prerequisite) will be counted toward the major; these courses may, however, count as general electives if approved by the office of Admissions.

Regularly enrolled UM students wishing to take a Psychology course elsewhere (e.g., during the summer) must obtain prior Departmental approval if they wish it to be counted in place of a U.M. Psychology course. In some cases, transfer courses not approved as part of the major or minor may still meet other distribution or elective requirements.

Senior Assessment

Seniors will be required to take part in a senior assessment lasting up to four hours. Departmental self-assessment is mandated by SACS (The Southern Association of Colleges and Schools) and is a necessary part of accreditation. These scores will not affect the student’s graduation status.

DEPARTMENTAL HONORS

Departmental Honors in Psychology entails both excellence in regular course work and completion of a Senior Honors Thesis (PSY 498 and PSY 499), an individual research project done under the direction of a UM faculty member. Eligibility requirements for the Senior Honors Thesis in Psychology include 18 credits in psychology with a 3.3 cumulative GPA and a 3.5 Psychology GPA, completion of PSY 316 prior to enrolling in PSY 498, and usually a year of prior research with the faculty member.

To enroll in PSY 498 and PSY 499, students must obtain written approval from both the faculty mentor who will supervise the thesis and the Director of Undergraduate Studies in
Psychology. These faculty members will also assess the adequacy of the thesis upon completion.

Students are expected to complete the Thesis course sequence. A grade of “IP” (i.e., incomplete in progress) is given for PSY 498 until the PSY 499 is completed and approved by the Director of Undergraduate Studies.

Psychology Course Listing
RELIGIOUS STUDIES - Dept. Code: REL
www.as.miami.edu/religion

INTRODUCTION

The University regards the academic study of religion as an integral part of liberal, humane learning and seeks to assist students in understanding the role religion plays in human existence and culture. Instruction in the Department of Religious Studies is non-sectarian and seeks an open analysis of all points of view. Courses are designed to provide a general orientation to the academic study of religion for the undergraduate student, as well as more advanced exposure for those who wish to pursue professional careers where a study of religious ideas and institutions would be helpful, such as in psychology, sociology, history, journalism, teaching, law, medicine, the fine arts, religious education, the ministry, and the rabbinate.

The Department sponsors a wide variety of speakers and events each year, including a Religious Studies Colloquium series and a Forum on Religion and Public Life. It has enriched the existing curriculum by bringing to the campus such outstanding scholars as Elizabeth Kuebler-Ross, Joachim Jeremias, Alvin Plantinga, Harry M. Orlinsky, Anson Rainey, Abraham J. Malherbe, Alan Segal, William May, Robert Segal, Douglas Allen, Marvin Sweeney, Martin Hengel, Martin E. Marty, and Juergen Moltmann.

EDUCATIONAL OBJECTIVES

The general educational objectives of the Department are (1) to explore texts, histories, and ways in which humans from various cultures have understood their world including the beliefs, ethics, rituals, artifacts, and organizations of religions; (2) to understand the changing relationship between religion and elements of the wider culture including the dynamics of politics, art, economics, literature, and society and their relationship to religions; (3) to become familiar with the theories and methods used in the study of religion.

DEGREE PROGRAMS

The Department offers two tracks by which students may earn a major or a minor. The first track is Religious Studies, which is designed for students who are seeking a broad and comprehensive understanding of the world’s major religions and the cultures in which they are practiced. The second track is Religion and Health Care, which is designed for students who are interested in any aspect of health care or who wish to supplement their pre-med concentration with coursework in the field of Religious Studies.

MAJORS

The Religious Studies Major

For students entering the University in or after Fall 2008, a major in Religious Studies leading toward the B.A. degree requires 30 credits in Religious Studies, passed with a grade of C- or higher, and a GPA in the major of 2.0. At least 15 credits must be earned in courses
numbered 300 or above. Six credits must be taken in each of the three following subject areas: 1) Religious Texts; 2) Historical Traditions; 3) Contemporary Issues. A major must earn writing credit (W) in at least one course in the department and must take the majors/minors seminar, REL 499.

Transfer students who major in Religious Studies must complete at least 15 credits in departmental courses numbered 300 or above in residence at the Coral Gables Campus.

The Religion and Health Care Major

For students entering the University in or after Fall 2008, a major in Religion and Health Care leading toward the B.A. degree requires 30 credits in Religious Studies, passed with a grade of C- or higher, and a GPA in the major of 2.0. At least 15 credits must be earned in courses numbered 300 or above, and a major must earn writing credit (W) in at least one course in the department. Students must complete five Religion and Health Care courses and are required to take the majors/minors seminar (REL 499), one course in Religious Texts, and one course in Historical Traditions. The two remaining courses are electives chosen from any of the courses offered by the Department of Religious Studies.

Transfer students who major in Religion and Health Care must complete at least 15 credits in departmental courses numbered 300 or above in residence at the Coral Gables campus.

MINORS

The Religious Studies Minor

For students entering the University in or after Fall 2008, an undergraduate minor requires 15 credits, passed with a grade of C- or higher, and a GPA in the minor of 2.0. At least six credits must be earned in courses numbered 300 or above, and at least three credits must be taken in each of two of the three subject areas: 1) Religious Texts; 2) Historical Traditions; 3) Contemporary Issues. Religious Studies 101 is required of all minors. Religious Studies minors are encouraged to take the majors/minors seminar, REL 499, but are not required to do so.

Transfers who minor in Religious Studies must complete at least 6 credits in departmental courses numbered 300 or above in residence at the Coral Gables campus.

The Religion and Health Care Minor

For students entering the University in or after Fall 2008, an undergraduate minor in Religion and Health Care requires 15 credits, passed with a grade of C- or higher, and a GPA in the minor of 2.0. At least six credits must be earned in courses numbered 300 or above. The Religion and Health Care minor consists of REL 101 (Introduction to Religion), three Religion and Health Care courses, and one of the following: one course in Religious Texts, or one course in Historical Traditions, or the majors/minors seminar, REL 499.

Transfers who minor in Religion and Health Care must complete at least 6 credits in departmental courses numbered 300 or above in residence at the Coral Gables campus.
DEPARTMENTAL HONORS

Majors, minors, and other students who meet certain academic criteria are eligible for membership in Theta Alpha Kappa, the National Honor Society for Religious Studies and Theology. Theta Alpha Kappa sponsors events that enhance the academic and social life of the department.

In keeping with its emphasis on a global approach to the study of religion and society, the Department sponsors a study abroad program known as URome. This semester-on-location program, which is open to all qualified University of Miami undergraduate students, is offered each spring semester in collaboration with the American University of Rome. A limited amount of scholarship support for the URome program is available for qualified Religious Studies majors and minors.

Religious Studies Course Listing
SOCIOMETRY - Dept. Code: SOC  
www.as.miami.edu/sociology

INTRODUCTION

The Department of Sociology offers two majors—sociology and criminology.

Course work in SOCIOMETRY is designed to provide scientific training for understanding the organization and fluid nature of contemporary society, patterns of social change, and the mutual influence between macro structures and processes (society and culture) on one hand, and the micro level (individuals and groups) on the other. Increasingly, sociologists are also focused on understanding the processes of globalization that are currently transforming contemporary societies.

Courses for both majors are designated SOC; see course list below. For information on Criminology please see the CRIMINOLOGY section of the Bulletin.

Students majoring in Sociology or Criminology may not minor in the reciprocal discipline.

EDUCATIONAL OBJECTIVES

The undergraduate program in Sociology has as its main objective to provide students with:

1. A strong component of a liberal arts education, training in analytical and statistical skills that are highly valued by potential employers;
2. A valuable undergraduate preparation for pursuing careers in such fields as journalism, politics, public relations, business or public administration and in other—fields that involve investigative or analytical skills or working with diverse groups;
3. An excellent and comprehensive training program for students wishing to pursue graduate work in programs leading to academic positions, research expertise, or work in the field of applied sociology.

DEGREE PROGRAMS

Students may earn a Bachelor of Arts degree in Sociology. The Department of Sociology also offers graduate programs leading to M.A. and Ph.D. degrees in the areas of:

- Medical sociology
- Race and ethnic relations
- Criminology

MAJOR

A major in SOCIOMETRY requires: a minimum of 31 credits, including:
Required Courses

SOC 101 Introduction to Sociology (3 credits)
SOC 210 Introduction to Social Research\(^1\) (3 credits)
SOC 211 Quantitative Methods for Sociologists\(^2\) (3 credits)
SOC 212 Quantitative Methods Lab (1 credit)
SOC 401 Sociological Theory (3 credits)

Two of the following three courses:
SOC 301 Social Organization (3 credits)
SOC 302 Social Psychology (3 credits)
SOC 303 Social Inequalities (3 credits)

Elective Courses

Four other courses offered by the Department for a total of 12 credits.

Other requirements

- A minimum final grade of C- in all courses offered by the Department
- A minimum cumulative GPA of 2.0 in all courses offered by the Department
- A minimum of **16 credits must be earned in residency** in the Department; thus, only a maximum of 15 credits can be transferred from other institutions as eligible credits for the SOCIOLOGY major

MINOR

A minor in SOCIOLOGY requires a minimum of 15 credits, including:

Required Courses

SOC 101 Introduction to Sociology (3 credits)

Elective Courses

Four other courses offered by the Department, **two of which must be 300 level or higher**, for a total of 12 credits.

Other requirements

- A minimum final grade of C- in all courses offered by the Department
- A minimum cumulative GPA of 2.0 in all courses offered by the Department
- A minimum of 9 credits must be earned in residency in the Department; thus, only a maximum of 6 credits can be transferred from other institutions as eligible credits for the SOCIOLOGY minor.

\(^1\)EPS 452 can be substituted for SOC 210 only by students who are also enrolled in the School of Education.
\(^2\)PSY 204 can be substituted for SOC 211 and SOC 212 only by students who are also majoring in Psychology.
DEPARTMENTAL HONORS

Graduation with Departmental Honors is available to eligible students who fulfill the following:

1. Students desiring Departmental Honors in Sociology or Criminology must maintain an overall GPA of 3.3 and a GPA of 3.5 in Sociology or Criminology. They must also achieve a minimum of B in all Sociology/Criminology courses. For transfer students, the Department uses the cumulative, combined GPA calculated by the Office of the Registrar.

2. A student seeking Departmental Honors is required to write an independent research paper which is submitted to the Undergraduate Committee. The nature of the independent research project is determined by the faculty member(s) with whom the student works. This project is done in SOC 498 & SOC 499 (Honors I & II). The student should have the same professor(s) for all six credits.

3. Recruitment of eligible students is by department invitation at the beginning of a student’s junior year.

Sociology Course Listing
THEATRE ARTS - Dept. Code: THA
www.as.miami.edu/theatrearts

INTRODUCTION

The University of Miami Department of Theatre Arts offers two distinct undergraduate degrees: a liberal arts program leading to a Bachelor of Arts degree in theatre and a pre-professional conservatory-based theatre training program leading to a Bachelor of Fine Arts degree in either Acting, Musical theatre, Stage Management, Theatre Management, or Design/Production.

The Department also produces a season of plays and musicals at the Jerry Herman Ring Theatre as well as workshops and student projects in the Studio Theatre.

EDUCATIONAL OBJECTIVES

The mission of the University of Miami’s Department of Theatre Arts is to equip students to work in professional theatre, film and television or to gain admission to the best professional graduate programs.

Our graduates will be capable of applying theatrical techniques without guidance and will be capable of making independent creative judgment. Our broad aim in theatre training is professional excellence combined with depth of human understanding, freedom of expression and imagination in communication for all practitioners of the art and craft of theatre.

DEGREE PROGRAMS

THE BACHELOR OF ARTS DEGREE
THE BACHELOR OF FINE ARTS DEGREE

MAJOR

THE BACHELOR OF ARTS DEGREE
All students seeking a Bachelor of Arts degree in Theatre Arts must take the following courses with a grade of C- or higher in all Theatre Arts classes and an overall GPA of 2.0 or above. All classes listed as THA (with the exception of THA 101) are eligible to be counted towards the BA Theatre Arts degree. The student needs a minimum of 36 credits drawn from the requirements listed below.

All Bachelor of Arts Candidates have 18 credits of core classes that must be completed. The Core Classes are:
THA 105 or 106 (only one will be counted), 141/143, 142/144, 381, 481, and 482.

Additionally, students must complete 18 more credits of elective classes:
9 credits at the 200 level or higher level
6 credits at the 300 level or higher level
3 credits at the 400 level
Transfer students have a residency requirement of 18 Theatre Arts credits on campus.

Please note THA 101 (Intro to Theatre) is NOT for Theatre Arts MAJORS.

The State of Florida recognizes the Bachelor of Arts and Bachelor of Fine Arts Degrees as meeting the Theatre Arts subject area requirements for teaching at the secondary level. In addition to earning the BA or BFA degree in Theatre, students desiring to teach in the field of Theatre Arts should complete the required education credits in order to be certified by the state.

**THE BACHELOR OF FINE ARTS DEGREE**

In addition to the general requirements for admission to the University, the student seeking admission to the BFA program must meet the following requirements of the Department of Theatre Arts:

1. Submission of a special supplementary application to the Department of Theatre Arts. (This form is located on the Department of Theatre Arts website under “Prospective Students.”)

2. An audition or interview/portfolio review to determine acceptance into the program. These audition/reviews will be held three times on the University of Miami campus as well as in major cities throughout the United States.

3. Design/technical production, stage management and theatre management students will be accepted into these programs on a probationary basis following an interview/portfolio review. Permanent acceptance into these programs will be made at the end of the first year by a thorough examination of the student’s portfolio.

Transfer students must follow the same entering procedures as freshmen and should realize that placement into the program will be determined by the Theatre Arts faculty. Candidates cannot transfer into the design/technical production, stage management and theatre management BFA degree program beyond their sophomore year, unless approved by the head of the appropriate program. Transfer students are not allowed into the performance or musical BFA degree programs unless they are willing to begin on the freshman level in their conservatory curriculum.

The candidates for the degree of Bachelor of Fine Arts must satisfy the College of Arts and Sciences distribution requirements.

Each BFA student will be evaluated by the faculty at the end of each semester. This evaluation will determine if the student is invited to continue in the program. Additional evaluations will take place each time a student is involved in a project.

In Theatre Arts Department courses a cumulative 2.7 grade point average is required to remain in the BFA program. A Theatre Arts major must maintain a minimum grade of C- or higher in each required course outside the theatre. Failure to maintain satisfactory academic standing may result in the student being placed on academic probation by the Department and eventually to dismissal from the program.

Theatre Arts courses are progressive in nature and students must successfully complete each course in sequence. Failure to pass the requirements of any particular class in the conservatory may result in the student’s dismissal from the program.
Production activities and discipline within the Department will be governed by a student handbook, available on the Department website (www.miami.edu/tha).

Musical Theatre and Acting Majors will be admitted to the Bachelor of Fine Arts degree program only in the fall of each academic year.

The following pages specify the course requirements for each area of the BFA program.

### DESIGN/TECHNICAL PRODUCTION CURRICULUM

#### FRESHMAN YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 105 English Composition I</td>
<td>THA 142 Intro to Costume/Lighting Design (Lecture)</td>
</tr>
<tr>
<td>THA 141 Intro to Scene Design/Stage Craft (Lecture)</td>
<td>THA 144 Introduction to Theatre Crafts II (Lab)</td>
</tr>
<tr>
<td>THA 143 Introduction to Theatre Crafts I (Lab)</td>
<td>ENG 106 English Composition II</td>
</tr>
<tr>
<td>ART 101 Intro to Drawing I</td>
<td>Art 105 Figure Drawing</td>
</tr>
<tr>
<td>THA 365 Principles of Stage Management</td>
<td>Liberal Arts/Math</td>
</tr>
<tr>
<td>CIS 150 Business Analytics</td>
<td>THA 364 Introduction to Producing and Managing</td>
</tr>
<tr>
<td></td>
<td>Theatre</td>
</tr>
<tr>
<td></td>
<td>THA 105 Intro to Acting</td>
</tr>
</tbody>
</table>
|                                                    |                                                    | 18

#### SOPHOMORE YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>THA 241 Advanced Theatre Crafts</td>
<td>THA 242 Drafting for the Theatre</td>
</tr>
<tr>
<td>THA 243 Intro to Drawing for the Theatre</td>
<td>THA 386 History of Fashion</td>
</tr>
<tr>
<td>THA 381 Play Analysis I</td>
<td>THA 382 Play Analysis II</td>
</tr>
<tr>
<td>Liberal Arts/Math</td>
<td>THA 244 Advanced Drawing for the Theatre</td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>Liberal Arts</td>
</tr>
</tbody>
</table>
| COS 211 Public Speaking                             |                                                    | 15
|                                                    |                                                    | 18

#### JUNIOR YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
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<tbody>
<tr>
<td>THA 343 Costume Design</td>
<td>THA 442 Design Studio II</td>
</tr>
<tr>
<td>THA 344 Lighting Design</td>
<td>THA 342 Scenic Design</td>
</tr>
<tr>
<td>THA 385 History of Décor</td>
<td>THA 482 Theatre History II</td>
</tr>
<tr>
<td>THA 481 Theatre History I</td>
<td>Liberal Arts</td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>Theatre Elective</td>
</tr>
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</table>
|                                                    |                                                    | 15

#### SENIOR YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>THA 441 Design Studio I</td>
<td>THA 442 Design Studio II</td>
</tr>
<tr>
<td>THA 401 Internship</td>
<td>THA 402 Internship</td>
</tr>
<tr>
<td>THA 461 Play Direction I</td>
<td>Theatre Elective</td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>Theatre Elective</td>
</tr>
</tbody>
</table>
| Theatre Elective                                    |                                                    | 15

#### Notes:

1. THA 441 Design Studio I can be taken twice for a maximum of 6 credits.
2. THA 442 Design Studio II can be taken twice for a maximum of 6 credits.
3. Theatre Elective – must be a 200 level or above course.
4. ART 107 is highly recommended.
# MUSICAL THEATRE CURRICULUM

## FRESHMAN YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>THA 111 Acting I-A</td>
<td>2</td>
</tr>
<tr>
<td>THA 113 Movement I-A</td>
<td>2</td>
</tr>
<tr>
<td>THA 116 Dance I-A</td>
<td>2</td>
</tr>
<tr>
<td>THA 120 Freshman Studio I</td>
<td>1</td>
</tr>
<tr>
<td>THA 131 Musical Theatre Skills I</td>
<td>2</td>
</tr>
<tr>
<td>THA 141 Intro to Scene Design/Stage Craft (Lecture)</td>
<td>2</td>
</tr>
<tr>
<td>THA 143 Introduction to Theatre Crafts I (Lab)</td>
<td>1</td>
</tr>
<tr>
<td>THA 198 Voice and Speech</td>
<td>2</td>
</tr>
<tr>
<td>THA 196 Singing for the Stage I-A</td>
<td>1</td>
</tr>
<tr>
<td>THA 191 Introd Applied Musical Theatre Voice I</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total Credits</strong>: 16</td>
<td>16</td>
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</table>

## SOPHOMORE YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>THA 211 Acting II-A</td>
<td>2</td>
</tr>
<tr>
<td>THA 216 Dance II-A</td>
<td>1</td>
</tr>
<tr>
<td>THA 296 Singing for the Stage II-A</td>
<td>1</td>
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<tr>
<td>THA 298 Voice and Speech II-A</td>
<td>1</td>
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<tr>
<td>Elective</td>
<td>3</td>
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<tr>
<td>THA 291 Beg. Applied Music Theatre Voice I</td>
<td>2</td>
</tr>
<tr>
<td>ENG 105 English Composition I</td>
<td>3</td>
</tr>
<tr>
<td>THA 200 Advanced Musical Skills I</td>
<td>2</td>
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<tr>
<td><strong>Total Credits</strong>: 15</td>
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## JUNIOR YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
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<tbody>
<tr>
<td>THA 311 Acting III-A</td>
<td>2</td>
</tr>
<tr>
<td>THA 313 Movement III-A</td>
<td>1</td>
</tr>
<tr>
<td>THA 316 Dance III-A</td>
<td>2</td>
</tr>
<tr>
<td>THA 396 Singing for the Stage III-A</td>
<td>1</td>
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<tr>
<td>THA 398 Voice and Speech III-A</td>
<td>1</td>
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<tr>
<td>THA 481 Theatre History I</td>
<td>3</td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>3</td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong>: 18</td>
<td>19</td>
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## SENIOR YEAR

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
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<tbody>
<tr>
<td>THA 431 Musical Theatre Styles I</td>
<td>3</td>
</tr>
<tr>
<td>*THA 411 Acting IV-A *</td>
<td>2</td>
</tr>
<tr>
<td>THA 416 Auditioning-II</td>
<td>2</td>
</tr>
<tr>
<td>*THA 461 Play Direction I *</td>
<td>3</td>
</tr>
<tr>
<td>*THA 413 Movement III-A Stage Combat *</td>
<td>2</td>
</tr>
<tr>
<td>THA 491 Adv. Applied Music Theatre Voice I</td>
<td>2</td>
</tr>
<tr>
<td>Liberal Arts or THA 400 Acting for the Camera</td>
<td>3</td>
</tr>
<tr>
<td>*THA 316 Dance III-A *</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong>: 20</td>
<td>18</td>
</tr>
</tbody>
</table>

* optional but recommended
+: Acting for the Camera is required and must be taken in the Senior Year
### Freshman Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>THA 111 Acting I-A</td>
<td>2</td>
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<tr>
<td>THA 113 Movement I-A</td>
<td>2</td>
</tr>
<tr>
<td>THA 116 Dance I-A</td>
<td>2</td>
</tr>
<tr>
<td>THA 120 Freshman Studio I</td>
<td>2</td>
</tr>
<tr>
<td>THA 141 Intro to Scene Design/Stage Craft (Lecture)</td>
<td>2</td>
</tr>
<tr>
<td>THA 143 Introduction to Theatre Crafts I (Lab)</td>
<td>1</td>
</tr>
<tr>
<td>THA 198 Voice and Speech I-A</td>
<td>2</td>
</tr>
<tr>
<td>THA 294 Singing for Actors</td>
<td>2</td>
</tr>
<tr>
<td>ENG 105 English Composition I</td>
<td>3</td>
</tr>
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</table>

### Sophomore Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
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</thead>
<tbody>
<tr>
<td>THA 211 Acting II-A</td>
<td>2</td>
</tr>
<tr>
<td>THA 298 Voice and Speech II-A</td>
<td>1</td>
</tr>
<tr>
<td>THA 347 Make-Up</td>
<td>3</td>
</tr>
<tr>
<td>THA 381 Play Analysis I</td>
<td>3</td>
</tr>
<tr>
<td>Theatre Requirement or Theatre Elective</td>
<td>2-3</td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>3</td>
</tr>
<tr>
<td>14-15</td>
<td></td>
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</table>

### Junior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
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</thead>
<tbody>
<tr>
<td>THA 311 Acting III-A</td>
<td>2</td>
</tr>
<tr>
<td>THA 313 Movement III-A</td>
<td>1</td>
</tr>
<tr>
<td>THA 398 Voice and Speech III-A</td>
<td>1</td>
</tr>
<tr>
<td>THA 481 Theatre History I</td>
<td>3</td>
</tr>
<tr>
<td>Theatre Requirement or Theatre Elective</td>
<td>2-3</td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>3</td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>3</td>
</tr>
<tr>
<td>15-16</td>
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</table>

### Senior Year

<table>
<thead>
<tr>
<th>First Semester</th>
<th>Second Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>THA 411 Acting IV-A</td>
<td>2</td>
</tr>
<tr>
<td>THA 413 Movement III-A (Stage Combat)</td>
<td>2</td>
</tr>
<tr>
<td>THA 416 Auditioning-II</td>
<td>2</td>
</tr>
<tr>
<td>THA 461 Play Direction I</td>
<td>3</td>
</tr>
<tr>
<td>Theatre Requirement</td>
<td>2-3</td>
</tr>
<tr>
<td>Theatre Elective</td>
<td>2-3</td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>3</td>
</tr>
<tr>
<td>16-18</td>
<td></td>
</tr>
</tbody>
</table>

**Acting Majors must complete 4 additional Requirement Courses and 6 Elective Courses**

### Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>THA 294 Singing for Actors</td>
<td>2</td>
</tr>
<tr>
<td>CBR 233 Television Performance</td>
<td>3</td>
</tr>
<tr>
<td>THA 400 Acting for the Camera</td>
<td>3</td>
</tr>
<tr>
<td>Another approved singing Class</td>
<td>3</td>
</tr>
<tr>
<td>THA 356 Improvisational Acting</td>
<td>3</td>
</tr>
<tr>
<td>THA 364 The Theatre Industry</td>
<td>3</td>
</tr>
</tbody>
</table>

### Electives

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>THA 116 Beginning Dance and/or Another approved dance class</td>
<td>1-3*</td>
</tr>
<tr>
<td>Other approved singing class</td>
<td></td>
</tr>
<tr>
<td>THA 195 Singing for Actors I</td>
<td>2</td>
</tr>
<tr>
<td>THA 251 and/or 252 Scene Study</td>
<td>3*</td>
</tr>
<tr>
<td>THA or MVP 295 Singing for Actors II-B1</td>
<td></td>
</tr>
<tr>
<td>THA 352 Singing for the Musical Theatre</td>
<td>3*</td>
</tr>
<tr>
<td>OR THA 431 Musical Theatre Styles I</td>
<td></td>
</tr>
<tr>
<td>THA 432 Musical Theatre Styles II</td>
<td>2</td>
</tr>
<tr>
<td>THA 455 Acting for the Camera</td>
<td>3</td>
</tr>
<tr>
<td>THA 462 Directing for the Stage</td>
<td>3*</td>
</tr>
<tr>
<td>THA 466 Theatrical Unions</td>
<td>3</td>
</tr>
<tr>
<td>THA 375 Playwriting</td>
<td>3*</td>
</tr>
<tr>
<td>THA 365 Principles of Stage Management</td>
<td>3</td>
</tr>
<tr>
<td>CBR 592 Special Topics in Broadcasting</td>
<td>3</td>
</tr>
<tr>
<td>OR Other approved courses</td>
<td></td>
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</table>

* indicates recommended
## STAGE MANAGEMENT CURRICULUM

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th></th>
<th>Second Semester</th>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td>THA 365 Principles of Stage Management</td>
<td>3</td>
<td>THA 105 Introduction to Acting</td>
</tr>
<tr>
<td></td>
<td>THA 141 Introduction to Theatre Crafts I (Lecture)</td>
<td>2</td>
<td>THA 142 Intro to Costume/Lighting Design (Lecture)</td>
</tr>
<tr>
<td></td>
<td>THA 143 Introduction to Theatre Crafts I (Lab)</td>
<td>1</td>
<td>THA 144 Introduction to Theatre Crafts II (Lab)</td>
</tr>
<tr>
<td></td>
<td>ENG 105 English Composition I</td>
<td>3</td>
<td>ENG 106 English Composition II</td>
</tr>
<tr>
<td></td>
<td>MTC 109 Music Theory Skills I</td>
<td>3</td>
<td>CIS 150 Business Analytics</td>
</tr>
<tr>
<td></td>
<td>Liberal Arts</td>
<td>3</td>
<td>Liberal Arts/Math</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15</td>
<td></td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td>THA 105 Introduction to Acting</td>
<td>3</td>
<td>THA 463 Advanced Stage Management I</td>
</tr>
<tr>
<td></td>
<td>THA 142 Intro to Costume/Lighting Design (Lecture)</td>
<td>2</td>
<td>THA 242 Drafting for the Theatre</td>
</tr>
<tr>
<td></td>
<td>THA 144 Introduction to Theatre Crafts II (Lab)</td>
<td>1</td>
<td>THA 382 Play Analysis II</td>
</tr>
<tr>
<td></td>
<td>ENG 106 English Composition II</td>
<td>3</td>
<td>COS 112 Interpersonal Communication</td>
</tr>
<tr>
<td></td>
<td>CIS 150 Business Analytics</td>
<td>3</td>
<td>Liberal Arts</td>
</tr>
<tr>
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<td>Liberal Arts/Math</td>
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</tr>
<tr>
<td></td>
<td>MVP 210 Score Reading for SM Major</td>
<td>1</td>
<td></td>
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<tr>
<td><strong>Junior Year</strong></td>
<td>THA 459 Stage Management Practicum</td>
<td>3</td>
<td>THA 463 Advanced Stage Management I</td>
</tr>
<tr>
<td></td>
<td>THA 243 Intro to Drawing for the Theatre</td>
<td>3</td>
<td>THA 242 Drafting for the Theatre</td>
</tr>
<tr>
<td></td>
<td>THA 364 The Theatre Industry</td>
<td>3</td>
<td>THA 382 Play Analysis II</td>
</tr>
<tr>
<td></td>
<td>THA 381 Play Analysis I</td>
<td>3</td>
<td>COS 112 Interpersonal Communication</td>
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<td>Liberal Arts</td>
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<td>Theatre Elective</td>
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<tr>
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<td>MVP 210 Score Reading for SM Major</td>
<td>1</td>
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<tr>
<td><strong>First Semester</strong></td>
<td>THA 464 Advanced Stage Management II</td>
<td>3</td>
<td>THA 469 are recommended</td>
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<tr>
<td></td>
<td>THA 462 Play Direction II</td>
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<td>THA 482 Theatre History II</td>
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<td></td>
<td>COS 211 Public Speaking</td>
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<td>Theatre Elective</td>
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<tr>
<td></td>
<td></td>
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</table>

| Sophomore Year | THA 459 Stage Management Practicum | 3               | THA 464 Advanced Stage Management II | 3 |
|                | THA 241 Advanced Theatre Crafts | 3               | THA 462 Play Direction II | 3 |
|                | THA 461 Play Direction I | 3               | THA 482 Theatre History II | 3 |
|                | THA 481 Theatre History I | 3               | COS 211 Public Speaking | 3 |
|                | THA 344 Lighting Design | 3               | Theatre Elective | 3 |
|                | Theatre Elective | 3               |                   | 3 |
|                |                   | 18              |                   | 18 |
| **First Semester** | THA 469 are recommended | 3               |                   | 3 |
|                | Liberal Arts/Math | 3               |                   | 3 |
|                | Liberal Arts | 3               |                   | 3 |
|                | MVP 210 Score Reading for SM Major | 1               |                   | 18 |
| **Second Semester** | THA 420 Senior Studio | 3               |                   | 3 |
|                | THA 401 Internship | 3               |                   | 3 |
|                | THA 402 Internship | 3               |                   | 3 |
|                | Liberal Arts | 3               |                   | 3 |
|                | Theatre Elective | 3               |                   | 3 |
|                |                   | 18              |                   | 18 |

| Senior Year | THA 459 Stage Management Practicum | 3               | THA 420 Senior Studio | 3 |
|             | THA 466 Theatre Management II (Unions) | 3               | THA 401 Internship | 3 |
|             | Liberal Arts | 3               | THA 402 Internship | 3 |
|             | Liberal Arts | 3               | Liberal Arts | 3 |
|             | THA Elective | 3               | Theatre Elective | 3 |
|             |                   | 18              |                   | 18 |
| **First Semester** | THA 469 are recommended | 3               |                   | 3 |
|                | Liberal Arts/Math | 3               |                   | 3 |
|                | Liberal Arts | 3               |                   | 3 |
|                | THA Elective | 3               |                   | 3 |
|                | KIN 145 Responding to Emergencies (1st Aid) | 2               | MGT 304 Organizational Behavior | 3 |
|                |                   | 17              |                   | 18 |

## Note:

1. All Stage Management majors are required to participate in a production capacity in one show per semester for all eight semesters.

2. All Stage Management majors are required to stage manage or assistant stage manage one show in each year in their Sophomore, Junior and Senior year. This management assignment doubles as their production assignment for that particular semester.

3. THA 459 Stage Management Practicum can be repeated for a maximum of 18 credits.

4. THA Elective must be a 200 level or above course unless otherwise approved by Stage Management Faculty.
## THEATRE MANAGEMENT CURRICULUM

<table>
<thead>
<tr>
<th>FRESHMAN YEAR</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td><strong>Second Semester</strong></td>
</tr>
<tr>
<td>THA 141 Intro to Scene Design/Stage Craft (Lecture)</td>
<td>THA 142 Intro to Costume/Lighting Design (Lecture)</td>
</tr>
<tr>
<td>THA 143 Introduction to Theatre Crafts I (Lab)</td>
<td>THA 144 Introduction to Theatre Crafts II (Lab)</td>
</tr>
<tr>
<td>THA 365 Principles of Stage Management</td>
<td>THA 364 The Theatre Industry</td>
</tr>
<tr>
<td>ENG 105 English Composition I</td>
<td>ENG 106 English Composition II</td>
</tr>
<tr>
<td>CAP 116 Introduction to Public Relations in Society</td>
<td>THA 244 Drawing for the Theatre II</td>
</tr>
<tr>
<td>CIS 150 Introduction to Computer Information</td>
<td>MTH 101 Algebra for College Students</td>
</tr>
<tr>
<td>Systems</td>
<td>CAP 232 Promotional Writing</td>
</tr>
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## MINOR

### MINOR IN THEATRE ARTS
A minor in Theatre Arts consists of 15 credits of Theatre Arts classes with a minimum grade of C- in each course and an overall GPA of 2.0 or above.

[Theatre Arts Course Listing](#)
INTRODUCTION

The minor in Urban Studies provides undergraduate students with a flexible concentration in interdisciplinary studies of cities, urbanism, and urbanity. Urban Studies is a long established academic field, especially prominent in major cities in the United States. Course work combines a practical focus on Metropolitan Miami with more general attention to urban theory and globalization from a global perspective.

The minor has a liberal arts orientation and includes perspectives from the social sciences, architecture, and history. It is a useful complement to majors such as Geography, History, Sociology, Anthropology, Literature, International Studies, Economics, Political Science, and others. The minor is also of particular interest to students in Architecture Communication and Business. Courses in the Minor are taught in the College of Arts & Sciences and the School of Architecture. Note that there are slightly different requirements for ARC students.

MINOR

Requirements:

- Students must complete 15 credits (five courses);
- In all five courses, students must achieve a minimum grade of C- with a 2.0 overall GPA;
- All minors are required to take two core courses:
  - URB 201 Metropolitan Miami, 3 cr.
  - URB 301 Cities in Time and Space, 3 cr.

- In addition, students must select three courses from the list of Optional Courses, below. All are 3-credit courses. ARC students may select no more than one ARC course while Non-ARC students must select at least one ARC course. Note that URB 201 or URB 301 will suffice as prerequisites for any of these courses.
  - AMS 350 History and Culture of South Florida
  - ARC 390/590 History of Cities
  - ARC 541 Seminar on Town Design
  - ARC 546 Studies of Havana
  - ARC 554 Architecture of South Florida
  - ARC 584 Special Topics: On-Site Survey of European Architecture and Urbanism
  - APY 420 Archaeology, Architecture, and the City
  - ENG 395 Latino/a Metropolis
  - FIN 340 Real Estate Principles
  - GEG 430 World Cities
  - GEG 511 Spaces of Hope
  - GEG 522 Urbanization in the Developing World
  - GEG 523 Seminar in Urban Management
  - INS 504 Human Security and Urban Violence
  - SOC 304 Dynamics of Poverty in the United States
  - SOC 368 Violence in America
- SOC 386 US Immigration
- HIS 369 Introduction to Urban America
- HIS 371 Immigration, Race, and Ethnicity in American History
- POL 343 Government in Metropolitan Areas

Other courses may be approved upon request; please consult the program Director, Dr. Jan Nijman at Nijman@miami.edu.
INTRODUCTION

The Program in Women's and Gender Studies at the University of Miami seeks to encourage the rigorous investigation of gender as a significant issue in all areas of human experience. It reaches across disciplines to draw on a range of methods, theories, and perspectives that help us to understand how ideas and structures based on gender shape our lives. The program's core objective is to foster the examination, open discussion, and lively debate of gender issues among faculty and students from all fields of study, enriching the undergraduate curriculum and the university's academic mission through greater communication across disciplines and colleges. Its aim is to broaden, deepen, and transform the learning community at UM and beyond.

EDUCATIONAL OBJECTIVES

The undergraduate curriculum in Women's and Gender Studies explores the ways in which ideas about gender and sexuality shape social roles and identities, as well as the ways in which race, ethnicity, class, and nationhood influence the perception and experience of gender and sexuality within particular cultures. The curriculum is informed by recent scholarship that recognizes gender and sexuality as crucial components of human experience in social, cultural, economic, political, religious, and legal contexts. It includes courses that introduce students to feminist theory and scholarship, engaging ethical and political issues of equality and justice. The program encourages students to question their assumptions about the possible meanings of female and male through the comparative study of how different societies and historical periods have viewed manhood, womanhood, and relations between women and men. Courses in Women's and Gender Studies enable students to acquire critical and analytical skills that they can then apply in other aspects of their educational experience at UM and beyond the university in their careers and personal development.

MAJOR

A major in Women's and Gender Studies consists of at least 30 credits in Women's and Gender Studies courses (core, co-listed, and cross-listed) with a grade of C- or better in each course, with a cumulative GPA of at least 2.0 in WGS courses. These credits must include at least 18 at the 300 level or above. All majors must complete WGS 201: Introduction to Women's and Gender Studies, WGS 301: Feminist Inquiries, and at least two other WGS core courses.

All majors must complete WGS 501: Senior Research Project, which will take the form of an individual research project with a faculty member of the student's choice; the student is responsible for finding an appropriate faculty member who is available to supervise the project and then must seek formal approval from the program director before proceeding with the project. The student must produce a substantial written report or research paper, the format of which will vary according to the nature of the project.
MINOR

1. A minor in Women's and Gender Studies consists of at least 15 credits in Women's and Gender Studies courses (core, co-listed, and cross-listed) with a grade of C- or better in each course, with a cumulative GPA of at least 2.0 in WGS courses. These credits must include at least 9 at the 300 level or above. All minors must complete WGS 201: Introduction to Women's and Gender Studies, WGS 301: Feminist Inquiries and at least one other WGS core course.

2. New Minor

I. Overview of the Program: LGBTQ (Lesbian/Gay/Bisexual/Transgender/Queer) Studies

The LGBTQ Studies minor is designed to allow students to explore sexuality and sexual minorities from a variety of perspectives. The course will provide students with an introduction to a broad array of LGBTQ issues including visual and performing arts, literature, languages, history, social science, various theories, public policy and the law, families and other types of intimate relationships, crime, popular culture, and LGBTQ identities and communities. This widely interdisciplinary field addresses work in a broad range of scholarly disciplines including biological and cultural studies, in literature and anthropology, in the health sciences, history, and the visual arts. It ranges from archival research to the elaboration of queer theory, from the analysis of constitutional law to questions of public health, from the study of popular culture to investigations into the development and social construction of sexual identity.

II. Requirements for the Minor:

MINOR IN LESBIAN/GAY/BISEXUAL/TRANSGENDER/QUEER (LGBTQ) STUDIES

A minor in LGBTQ Studies consists of at least 15 credits in LGBTQ Studies courses (requirements, core, and related courses, co-listed and cross-listed) with a grade of C- or better in each course, with a cumulative GPA of at least 2.0 in LGBTQ courses. All minors must complete WGS 202: Introduction to LGBTQ Studies and WGS 201: Introduction to Women's and Gender Studies. The remaining course work must include at least 9 credit hours at the 300 level or above and no more than 6 credit hours in any one department or program or more than 3 credit hours of individual studies without the approval of the program director.

REQUIREMENTS

WGS 202: INTRODUCTION TO LGBTQ STUDIES
An introductory examination of lesbian, gay, bisexual, transgender and queer issues from an interdisciplinary perspective. (3 credits).

WGS 201: INTRODUCTION TO WOMEN’S AND GENDER STUDIES How are our lives shaped by gender? This course introduces students to the ways in which Women’s and Gender Studies as an interdisciplinary field examines conceptions of masculinity and femininity; gender relations; gender inequalities; the intersections of gender with other categories of identity such as class, race, sexuality, and stages in the life cycle; and the broad impact of gender on society (including political, legal, economic, and religious arenas). (3 credits).

CORE COURSES (SELECT AT LEAST 6 CREDITS) WGS 210: POPULAR REPRESENTATIONS OF QUEER SEXUALITIES (3 credits).
WGS 210: POPULAR REPRESENTATIONS OF QUEER SEXUALITIES (3 credits).
WGS 350: SPECIAL TOPICS IN WOMEN’S AND GENDER STUDIES (3 credits).
WGS 450: SPECIAL TOPICS IN LGBTQ STUDIES (3 credits).
WGS 499: INDEPENDENT STUDY
WGS 501: SENIOR RESEARCH PROJECT

All minors may choose to complete an individual research project with a faculty member of the student’s choice; the student is responsible for finding an appropriate faculty member who is available to supervise the project and then must seek formal approval from the written report or research paper, the format of which will vary according to the nature of the project.

POL569: POLITICS, LAW AND SEXUAL IDENTITY (3 credits).
This course considers sexual politics by looking in depth at several issues including; restrictions on marriage, adoption, employment, military service, housing, and intimacy based on sexuality and/or gender identity. For each issue, we shall consider how the debate is constructed by politicians, academics, the media, LGBT activist organizations and law/legal theory. We will also contemplate the state and national politics at work within these issues. Finally, we will consider the topics from a comparative view as well as address the international implications arising out of that comparative consideration. In general, the goal is to learn about the current state of the politics of sexual identity in the United States and abroad. Moreover, students will engage frameworks through which politics might be assessed and determine the generalizability of the logics of politics. PREREQUISITE: POL 211 AND 212. POL 373 AND 374 RECOMMENDED.

SOC 335: SOCIOLOGY OF LGBTQ COMMUNITIES AND IDENTITIES (3 credits).
This course examines the history, methods, theory and concepts of social science research on LGBTQ topics from the last half century to the present. Prerequisite: SOC 101.

WGS 305: QUEER STUDIES (3 credits).
This course examines gay, lesbian, bisexual, transgender, transsexual, and queer identities as they shape daily lives and experiences; the construction of alternative family structures; queer theory and its implications for our understanding of key issues across a range of disciplines; and current debates over the meaning and validity of sexuality as a way of understanding human sexual desire, emotions, and behavior.

RELATED COURSES:

STUDENTS SELECT TWO APPROPRIATE AND RELEVANT COURSES IN ANY DEPARTMENT, IN CONSULTATION WITH THE DIRECTOR OF WGS.

PLEASE NOTE: Only WGS 201 (Introduction to Women's and Gender Studies) may count for BOTH the major in WGS AND the minor in LGBTQ Studies.

DEPARTMENTAL HONORS

Women's and Gender Studies majors with a cumulative GPA of at least 3.5 in WGS courses and an overall GPA of at least 3.0 may earn departmental honors by completing WGS 505: Honors Thesis instead of the senior research project. Candidates for departmental honors are responsible for finding a faculty member who is willing to serve as thesis adviser and then must complete a thesis proposal of approximately 400 words which must be approved by the thesis adviser and then the program director. The format and length of the thesis will
vary according to the nature of the project. Most students writing an honors thesis as part of their WGS major will take WGS 505 twice (for a total of 6 credits).

Women’s and Gender Studies Course Listing
INTRODUCTION

The School of Business Administration offers courses leading to the degrees of Bachelor of Business Administration (BBA) and Bachelor of Science in Business Administration (BSBA). Undergraduate degrees in business are administered by the Vice Dean, Undergraduate Business Education.

MISSION

The mission of the University of Miami School of Business Administration is to provide an environment in which the creation and dissemination of business knowledge can flourish.

ACCREDITATION

The Bachelor of Science in Business Administration and the Bachelor and Master of Business Administration as well as the undergraduate and graduate Accounting programs are fully accredited by The Association to Advance Collegiate Schools of Business, International (AACSB – International).

ACADEMIC POLICIES

Student Responsibilities

- Students in the School of Business Administration are responsible for planning their own programs and for meeting degree requirements;
- It is the student’s responsibility to understand fully, and to comply with all the provisions of this Bulletin and written changes to their program of study;
- Students are provided assistance by academic advisors and faculty members;
- Requests for deviation from department, program, or school requirements are granted only by written approval from the Vice Dean or respective department chairperson;
- Information regarding appeal procedures and special requests relative to academic matters is available in Merrick 104, School of Business Administration, Office of Undergraduate Business Education.
- Students who are in violation of the provisions of this Bulletin may be withdrawn unilaterally by appropriate School officials from classes, deleted as Business students, and/or have a “STOP” placed upon their future enrollment;
• Students who are disruptive in class as determined by assigned faculty and the appropriate Vice Dean will be dropped from the class;

Admission to the School of Business Administration

Admission to the University for undergraduate study as a freshman is sufficient to be granted admission to the School of Business Administration. However, strong quantitative skills are typically needed for success. Admitted students may select an intended major and optional minor(s). Students who do not state an intended major are listed as undeclared in business.

Transfer Student Admission

The transfer applicant must submit a satisfactory academic record in compliance with the standards of the University of Miami, Office of Admission. All previous transfer courses must be from an accredited institution. The applicant must be in good academic standing at all institutions previously attended with a minimum cumulative grade point average of 3.0. A minimum grade of "C" (2.0) must be earned in transfer courses, unless otherwise stated, in order for credit to be awarded. All grades earned in transfer courses are used to determine the overall cumulative grade point average. This includes repeated courses under a forgiveness policy at previous institutions.

All applicants to the School of Business Administration must have completed and received college credit for a calculus course and earned a grade of “B” or better. The calculus course must be evaluated by submitting the syllabus and textbook title for review to the Director of Advising, Undergraduate Business Education in the School of Business Administration.

Any business course that is from a non-AACSB accredited institution will be accepted as electives toward the degree requirements. An applicant may appeal the decision by submitting the syllabus and textbook title to the appropriate department for review.

Transfer coursework must meet the specific curriculum requirements as determined by the Office of Undergraduate Business Education. Note that transfer students must complete 50 percent of the total Business Foundation and Professional Business Core and 50 percent of all major and all minor courses at the University of Miami.

It is strongly recommended that transfer applicants meet the following requirements at the time of transfer application:

• One semester of microeconomics (ECO 211), which may also be fulfilled by:
  o A score of "3" on the AP Microeconomics exam;
  o A score of "5" on the IB Higher Level Economics exam;
  o A course equivalent to microeconomics as determined by the Department of Economics.

• One semester of financial accounting (ACC211), which may also be fulfilled by:
  o A course equivalent to Financial Accounting as determined by the Department of Accounting.

• One semester of statistics (MAS201), which may also be fulfilled by:
  o A score of "4" on the AP Statistics exam;
A course equivalent to Introduction to Business Statistics as determined by the Department of Management Science.

It is strongly recommended that transfer applicants applying with 60 semester hours or more meet the following requirements at the time of transfer application:

- Two semesters of introductory economics, Micro and Macro (ECO211 and ECO212), which may also be fulfilled by:
  - A score of "3" on the AP Micro and/or Macroeconomics exam;
  - A score of "5" on the IB Higher Level Economics exam awards credit in Microeconomics;
  - A score of "6" on the IB Higher Level Economics exam awards credit in Micro- and Macroeconomics;
  - A course equivalent to Microeconomics or Macroeconomics as determined by the Department of Economics.

- One semester of financial accounting (ACC211), which may also be fulfilled by:
  - A course equivalent to Financial Accounting as determined by the Department of Accounting.

- One semester of managerial accounting (ACC212) which may also be fulfilled by:
  - A course equivalent to Managerial Accounting as determined by the Department of Accounting.

- One semester of statistics (MAS201), which may also be fulfilled by:
  - A score of "4" on the AP Statistics exam;
  - A course equivalent to Introduction to Business Statistics as determined by the Department of Management Science;
  - A second semester of statistics (MAS202) is strongly recommended, which may be fulfilled by a course equivalent to Intermediate Business Statistics as determined by the Department of Management Science.

**Academic Progress and Probation**

- The School of Business Administration will review each student’s record at the end of each semester;

- When a student’s semester or cumulative average is less than 2.0, or progress toward degree completion is unsatisfactory, the student will be placed on academic probation or warning in accordance with the University’s or School of Business Administration’s policies and procedures;

- Full-time business students who are not completing sufficient courses to graduate after ten regular semesters of enrollment are deemed not to be making satisfactory academic progress;

- The extent to which a student’s record is below a 2.0 average determines the severity of the sanction, i.e., warning, academic probation, or dismissal;

- Students on probation are not permitted to enroll in more than 13 semester hours and may have a “STOP” placed upon their future enrollment until grades for work-in-progress are reviewed.
Academic Dismissal

- Business students may be dismissed in accordance with the University’s or School of Business Administration’s Dismissal Standards;

- Additionally, a student in the School of Business Administration whose grade point average or progress toward degree completion falls below the level of the minimum standards may be dismissed;

- Students will be precluded from continuing their studies in a major or courses if they do not have the specified grade point average or grades for the major or courses;

- A student who is precluded from continuing as an undergraduate business student because of failure to satisfactorily complete the required business foundation courses or to attain a high enough grade point average is not considered as having been academically dismissed from the University. Accordingly, such students may apply to another School or College and if accepted, continue as students at the University of Miami.

Freshman Repeat Rule (FRR)

The Freshman Repeat Rule (FRR) allows a student who receives a "D" or an "F" in a course taken at the University of Miami within the student's first thirty semester hours or first two regular semesters of college work, to repeat up to two such courses within the following two semesters. After the course has been repeated, only the second grade earned will be used in the computation of the student’s cumulative grade point average. However, the initial grade remains on the record, although the initial grade does not count as credits attempted or earned at the University of Miami.

The following policy is applied specifically to business students using the University’s Freshman Repeat Rule (FRR):

- The student’s academic standing is based upon the current grades being counted as credits attempted or earned;

- Students who repeat a course not under the provisions of the FRR are administered using the University General Repeat Rule;

- Students desiring to implement the policy must complete the FRR Request Form which is available in the School of Business Administration, Office of Undergraduate Business Education;

- The summer sessions are not counted as a semester in computing the two semesters in which a student may elect to repeat a course with a “D” or “F” grade. Additionally, a student who initially enters the University in the spring semester may repeat courses with a “D” or “F” grade taken in the summer sessions following initial enrollment without having the summer sessions count as one of the first two semesters;

- For additional information about the FRR, consult an Undergraduate Business Academic Advisor.
Readmission

The requirements for readmission may be viewed in the General Information section of this Bulletin. The following special conditions are in effect for the School of Business Administration:

- Students requesting readmission who were previously dismissed for academic reasons or who had below a 2.0 cumulative grade point average must present adequate evidence that the conditions and/or factors that caused their prior poor academic performance have changed sufficiently and that there is a reasonable expectation of satisfactory performance if they are permitted to resume study in the School of Business Administration;

- Additionally, students with prior unsatisfactory academic records who are readmitted may have conditions placed upon their readmission;

- Students requesting readmission who have earned 30 or more credits, unless otherwise specified, must have completed a calculus course with a grade of C or higher.

- Failure to satisfactorily accomplish the stated conditions may result in the student not being permitted to register for future semesters.

Changes to Academic Requirements

The School of Business Administration reserves the right to change academic requirements to include course offerings, grades, and grade point averages, to ensure that students are receiving the latest knowledge and are maintaining standards necessary to be professionally competitive. Changes are transmitted to students either by written or electronic notice, or by academic advisors or mentors.

REQUIREMENTS FOR GRADUATION

Residency Requirements

A candidate for the BBA or BSBA degree must complete the last 45 semester hours consecutively and exclusively in degree-seeking status in residence at the School of Business Administration, University of Miami, as well as meet the graduation requirements as listed in Degree Programs. Credit by examination may not be used to meet the residency requirement. In addition, a minimum of 120 semester hours is required for graduation, not including ENG103, or MTH099. The last 56 semester hours must be taken at a four-year institution.

Age of Credits

Credits more than 12 years old are not recognized for degree purposes.

Grade Point Average

Students must earn a cumulative grade point average of at least 2.0 on all undergraduate courses and a grade point average of at least 2.0 on all undergraduate courses taken at the
University of Miami. Some majors require a higher grade point average. It is the student’s responsibility to be familiar with the grade point requirement for their respective major.

**Percentage of Credits at UM required**

At least fifty percent of the total semester hours required in the Business Foundation, Professional Business Core, and the major and minor must be completed at the University of Miami. Considered separately, fifty percent of the semester hours required in the major only and/or minor only must be completed at the University of Miami.

**DEGREE PROGRAMS**

**BACHELOR OF BUSINESS ADMINISTRATION (BBA)**

**Areas of Study**

All BBA majors must complete areas A, B, C, D, E, F, and G as listed below. All courses except area E must be taken for graded credit.

**A. BUSINESS FOUNDATION (39 Semester Hours)**

- ACC211* Principles of Financial Accounting
- ACC212 Managerial Accounting
- BSL212 Introduction to Business Law
- CIS150* Business Analytics
- ECO211* Economic Principles and Problems – Microeconomics
- ECO212 Economic Principles and Problems – Macroeconomics
- ENG105* English Composition I
- ENG106* English Composition II
- MAS 110* Quantitative Applications in Business (Business Calculus)
- MAS201* Introduction to Business Statistics
- MAS202 Intermediate Business Statistics
- MGT100* F.I.R.S.T. Step
- MKT201 Fundamentals of Marketing

*Classes marked with an asterisk must be completed BEFORE beginning the Professional Business Core courses.

Unless otherwise specified, MAS110 and MAS201 must be completed with a “C-“ or better.

ALL Business Foundation courses must be completed before entering any business major and/or minor course work.

**B. PROFESSIONAL BUSINESS CORE (21 Semester Hours)**

- CIS410 Information Systems and Technology
- ECO302 Micro Economic Theory
- FIN302 Fundamentals of Finance
- MGT303 Operations Management
- MGT304 Organizational Behavior
- MGT401 Strategic Management (Must be taken in final semester)
CORE ELECTIVE  Any course at 300 level or higher from the School of Business Administration or any course at the 300 level or higher in a modern language.

C. GENERAL EDUCATION (30 Semester Hours)
   ENG230  Advanced Business Writing
   Fine Art
   Humanities
   Literature  From Department of English
   Natural World  (6 Semester Hours)
   People and Society  (6 Semester Hours)
   Philosophy or Religion
   General Education Elective (From outside the School of Business Administration)

D. MAJOR AND MINOR REQUIREMENTS
All students must complete the requirements for at least one major in one of the areas of specialization. Additionally, students may elect to complete a minor in an area of specialization distinctly different from their major. The minor may be in an area of specialization offered by the School of Business Administration or by another school or college of the University. The major and minor requirements are specified by each department. All specialization (major/minor) requirements must be taken for a grade and completed with a grade of “C-” or higher with an overall grade point average in all major and minor courses attempted of at least a 2.0 unless a higher grade or grade point average is prescribed for a specific major or minor.

Dual Business Majors in distinctly different areas of specialization are also possible, pending proper scheduling. The only specialized courses that can be counted toward both majors or a major and a minor are those courses specifically listed by number as required for both majors and/or minors. The courses of choice required for one major or minor may not be utilized to satisfy requirements for a second major or minor.

Business students may choose to pursue a second major (also referred to as a co-major) from the College of Arts and Sciences. No courses used to satisfy a co-major may be used to satisfy a business major or minor. Courses used to satisfy a co-major may, however, also be used to satisfy a general education requirement or the General Education Elective.

Students in other colleges and schools desiring a major in the School of Business Administration must complete all requirements for both degrees and majors. A student in another School or College at the University of Miami pursuing a business degree as a “second degree,” must meet the requirements for transfer to the School of Business.

Students are required to declare their majors and minors with the Office of Undergraduate Business Education prior to the start of their senior year. Students are advised that it often takes more than the minimum 120 semester hours to complete a minor or second major.
### Majors and Minors for the BBA Degree

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<tr>
<td>Marketing (MKTB)</td>
<td>MKT</td>
</tr>
</tbody>
</table>

**Minors offered by other colleges and schools**

Please see the college, school, or department section within the Bulletin.

**E. ELECTIVES (as needed to meet the minimum 120 semester hours)**

All undergraduate courses offered by the University may be used as free electives with the following exceptions:

- Not more than eight semester hours in applied music including band may be used;
- Courses taken in the following subjects require approval of the Vice Dean: athletic, physical and recreational activity courses offered in Kinesiology, Paralegal Studies, Vocal Performance and Teaching and Learning;
- ENG103 - Basic Writing Skills and MTH099 - Intermediate Algebra are offered but do not count toward degree requirements although the grade earned in the respective course is calculated into the cumulative grade point average;
- Any science course taken as an elective and used for preparing for entrance to medical school must be taken for a grade.
F. WRITING ACROSS THE CURRICULUM
Four of five writing courses required are provided within the degree requirements by the completion of BSL212, ENG230, one literature course, and MGT401. A fifth writing course is needed to complete University writing requirements.

G. INTERNATIONAL FOCUS WITHIN THE CURRICULUM
At least one course with an international focus must be completed within the degree requirements. The acceptability of the course is determined by the academic advisor.

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION (BSBA)

Areas of Study
The BSBA degree in the School of Business Administration emphasizes quantitative foundation courses. All BSBA majors in the School of Business must complete areas A, B, C, D, E, F, and G as listed below. All courses except area E must be taken for graded credit.

A. BUSINESS FOUNDATION (44 Semester Hours)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC211*</td>
<td>Principles of Financial Accounting</td>
</tr>
<tr>
<td>ACC212</td>
<td>Managerial Accounting</td>
</tr>
<tr>
<td>BSL212</td>
<td>Introduction to Business Law</td>
</tr>
<tr>
<td>CIS150*</td>
<td>Business Analytics</td>
</tr>
<tr>
<td>ECO211*</td>
<td>Economic Principles and Problems – Microeconomics</td>
</tr>
<tr>
<td>ECO212</td>
<td>Economic Principles and Problems – Macroeconomics</td>
</tr>
<tr>
<td>ENG105*</td>
<td>English Composition I</td>
</tr>
<tr>
<td>ENG106*</td>
<td>English Composition II</td>
</tr>
<tr>
<td>MAS311*</td>
<td>Applied Probability and Statistics</td>
</tr>
<tr>
<td>MAS312</td>
<td>Statistical Methods and Quality Control</td>
</tr>
<tr>
<td>MTH161*</td>
<td>Calculus I</td>
</tr>
<tr>
<td>MTH162*</td>
<td>Calculus II</td>
</tr>
<tr>
<td>MGT100*</td>
<td>F.I.R.S.T. Step</td>
</tr>
<tr>
<td>MKT201</td>
<td>Foundations of Marketing</td>
</tr>
</tbody>
</table>

*Courses marked with an asterisk must be completed before entering the Professional Business Core courses.

All Business Foundation courses must be completed before entering business major course work.

B. PROFESSIONAL BUSINESS CORE (21 Semester Hours)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS320</td>
<td>Introduction to Programming (Or any other programming course)</td>
</tr>
<tr>
<td>ECO302</td>
<td>Micro Economic Theory</td>
</tr>
<tr>
<td>ECO430</td>
<td>Applied Econometrics</td>
</tr>
<tr>
<td>FIN302</td>
<td>Fundamentals of Finance</td>
</tr>
<tr>
<td>MGT303</td>
<td>Operations Management</td>
</tr>
<tr>
<td>MGT304</td>
<td>Organizational Behavior</td>
</tr>
<tr>
<td>MGT401</td>
<td>Strategic Management (Must be taken in final semester)</td>
</tr>
<tr>
<td>CORE ELECTIVE</td>
<td>Any course at 300 level or higher from the School of Business Administration or any course at the 300 level or higher in a modern language.</td>
</tr>
</tbody>
</table>
C. GENERAL EDUCATION (23-24 Semester Hours)

ENG230 Advanced Business Writing
Fine Art
Humanities Literature From Department of English
Natural World (8-9 semester hours with or without labs)
Philosophy or Religion

D. MAJOR AND MINOR REQUIREMENTS

All students must complete the requirements for at least one major in one of the areas of specialization. Additionally, students may elect to complete a minor in an area of specialization distinctly different from their major. The minor may be in an area of specialization offered by the School of Business Administration or by another school or college of the University. The major and minor requirements are specified by each department. All specialization (major/minor) requirements must be taken for a grade and completed with a grade of “C-” or higher with an overall grade point average in all major and minor courses attempted of at least a 2.0 unless a higher grade or grade point average is prescribed for a specific major or minor.

Dual Business Majors in distinctly different areas of specialization are also possible, pending proper scheduling. The only specialized courses that can be counted toward both majors or a major and a minor are those courses specifically listed by number as required for both majors and/or minors. The courses of choice required for one major or minor may not be utilized to satisfy requirements for a second major or minor.

Business students may choose to pursue a second major (also referred to as a co-major) from the College of Arts and Sciences. No courses used to satisfy a co-major may be used to satisfy a business major or minor. Courses used to satisfy a co-major may be used, however, to satisfy a general education requirement or the General Education Elective.

Students in other colleges and schools desiring a major in the School of Business Administration must complete all requirements for both degrees and majors. A student in another School or College at the University of Miami pursuing a business degree as a “second degree,” must meet the requirements for transfer to the School of Business.

Students are required to declare their majors and minors with the Office of Undergraduate Business Education prior to the start of their senior year. Students are advised that it often takes more than the minimum 120 semester hours to complete a minor or second major.
Majors and Minors for the BSBA Degree

**Major Areas of Specialization**  
**Responsible Department**

- Accounting (ACCS)  
  ACC  
- Computer Information Systems (CISS)  
  CIS  
- Economics (ECOS)  
  ECO  
- Entrepreneurship (ENTS)  
  MGT  
- Finance (FINS)  
  FIN  
- Health Sector Management & Policy (HSMP)  
  MGT  
- Human Resource Management (HRMS)  
  MGT  
- International Finance and Marketing (IFMS)  
  FIN  
- Legal Studies (LSTS)  
  BSL  
- Management (MGTS)  
  MGT  
- Management Science (MASS)  
  MAS  
- Marketing (MKTS)  
  MKT  
- Real Estate (REAS)  
  FIN

**Minor Areas of Specialization**  
**Responsible Department:**

- Accounting (ACCB)  
  ACC  
- Business Law (BSL)  
  BSL  
- Computer Information Systems (CIS)  
  CIS  
- Economics (ECOB)  
  ECO  
- Entrepreneurship (ENBH & ENBT)  
  MGT  
- Finance (FIN)  
  FIN  
- Health Sector Management and Policy (HSMP)  
  MGT  
- International Business (IBUB)  
  Undergraduate Business Education  
- Management (MGTB)  
  MGT  
- Management Science (MASB)  
  MAS  
- Marketing (MKTB)  
  MKT

**Minors offered by other colleges and schools**  
Please see the college, school, or department section within the Bulletin.

**E. ELECTIVES (as needed to meet the minimum 120 semester hours)**

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- ENG103 - Basic Writing Skills and MTH099 - Intermediate Algebra are offered but do not count toward degree requirements although the grade earned in the respective course is calculated into the cumulative grade point average;

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F. WRITING ACROSS THE CURRICULUM
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G. INTERNATIONAL FOCUS WITHIN THE CURRICULUM
At least one course with an international focus must be completed within the degree requirements. The acceptability of the course is determined by the academic advisor.

INTERNATIONAL BUSINESS MINOR

IBUB MINOR

The International Business minor provides business students an interdisciplinary perspective of international business to augment their studies in other areas of specialization. The International Business minor consists of 12 semester hours as follows:

Core Courses - Choose two, three, or four courses from the following:
- ACC523
- FIN330
- MGT349
- MGT459
- MKT360

Breadth Elective Courses - Choose one or two courses to equal 12 total semester hours for the IBUB minor from:
- BSL412 ECO442 POL346 POL381 POL392
- ECO351 FIN431 POL347 POL384 POL544 POL591
- ECO371 MGT359 POL348 POL385 POL582 POL593
- ECO441 MKT469 POL380 POL387 POL588

The IBUB Minor may not be taken by students with the IFM major.

Student must complete all prerequisite courses before enrolling in required IBUB courses.

MINORS FOR NON-BUSINESS MAJORS (12-15 Semester Hours for Minor)

The School of Business Administration offers students in other schools and colleges of the University minors in:

<table>
<thead>
<tr>
<th>Minor Areas of Specialization</th>
<th>Responsible Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Administration (BUA)</td>
<td>Undergraduate Business Education</td>
</tr>
<tr>
<td>Business Law (BSL)</td>
<td>BSL</td>
</tr>
<tr>
<td>Computer Information Systems (CIS)</td>
<td>CIS</td>
</tr>
<tr>
<td>Economics (ECO)</td>
<td>ECO</td>
</tr>
<tr>
<td>Entrepreneurship (ENT)</td>
<td>MGT</td>
</tr>
<tr>
<td>Finance (FIN)</td>
<td>FIN</td>
</tr>
<tr>
<td>Health Sector Management and Policy (HSMP)</td>
<td>MGT</td>
</tr>
<tr>
<td>Management (MGT)</td>
<td>MGT</td>
</tr>
<tr>
<td>Marketing (MKT)</td>
<td>MKT</td>
</tr>
</tbody>
</table>
The International Business minor, the Accounting minor and the Management Science minor (BSBA degree only) are offered only to majors in the School of Business Administration.

Students interested in completing a minor offered by the School of Business Administration should consult with an academic advisor in the school or college of their major to determine if a minor in business is acceptable. The student must consult with an academic advisor in the Office of Undergraduate Business Education for assistance in planning the minor. All courses within the minor must be taken for a grade and completed with a grade of “C-” or higher and with an overall grade point average of at least 2.0 in all minor courses unless a higher grade or grade point average is prescribed by the minor department. All courses in the minor department in which the student enrolls will count toward the minor grade point average.

The Business Administration Minor (BUA) consists of four courses (12 semester hours).

The required courses are:
ACC211 Principles of Financial Accounting
MGT304 Organizational Behavior
FIN300 Finance for Non-Business Majors
MKT301 Marketing Foundations

Note: A student must have 30 earned semester hours before enrolling in ACC211. Additionally, a student must have 60 earned semester hours before enrolling in the respective FIN, MGT, or MKT courses. ACC211 should be the first course taken for the BUA minor.

For a listing of the course requirements for other minors, consult the Bulletin section for the department that offers the minor.

HONORS

DEPARTMENTAL HONORS IN BUSINESS

Graduation with Departmental Business Honors requires:

- A 3.9 g.p.a. in Business School courses at the end of the junior year
- Completion of a 3-credit research project during the entire senior year on a topic that is of interest to both the faculty member supervising the research and the student responsible for completing it. The depth of the project must be consistent with the time requirements of a 3-credit upper-level class in the supervising department.
- A 3.9 g.p.a. in all Business School courses at graduation.

Students who double major can complete their research project in either major department. Students in combined majors (ENT, HSMP, IFM, REA) can complete their research project in any department within the major. Students who have a minor can complete their research project in either their major or minor departments.
The 3-credit research project class is taken for credit only and will not count towards the 120 hours required for graduation. Students who begin a research project but do not complete it will be retroactively withdrawn from the research course. Students receive credit for the project only if the work is deemed to be of exceptional quality, consistent with the workload of a 3-credit upper-level independent study course, and worthy of a designation that is only open to the top 1% of Business School undergraduates.

Deadlines and procedures for the projects are available in the Office of Undergraduate Education and in department offices.

**GENERAL HONORS PROGRAM, UNIVERSITY OF MIAMI**

Eligible students are invited to join the University’s General Honors Program. A total of 24 semester hours of designated honors credits is required. A 3.5 cumulative grade point average must also be maintained in all honors courses.

For details, consult an academic advisor in the Office of Undergraduate Business Education and the University Honors Program Office.

**GENERAL BUSINESS HONORS, SCHOOL OF BUSINESS ADMINISTRATION**

Business students who are members of the General Honors Program of the University, are completing the required 24 hours for that program, and have demonstrated superior performance in the School of Business may receive academic advantages, certain privileges, and recognition by participation in and successful completion of General Business Honors.

General Business Honors requires that 15 of the 24 semester hours are business courses taken in sections designated as “Honors.”

Strategic Management, MGT401 (at the Honors section), must be one of the 5 courses.

Examples of other business courses frequently offered in honors sections are:
- BSL212 Introduction to Business Law
- ECO211 Economic Principles and Problems (microeconomics)
- ECO212 Economic Principles and Problems (macroeconomics)
- ECO302 Micro Economic Theory
- FIN302 Fundamentals of Finance
- MGT304 Organizational Behavior
- MKT201 Foundations of Marketing

In addition, a 3.5 cumulative grade point average must be maintained in all honors business courses to receive the notation, “General Business Honors” on the diploma and transcript.

For details, consult an academic advisor in the Office of Undergraduate Business Education and the University Honors Program Office.
GRADUATION HONORS

- Students who qualify based on their cumulative grade point average and class rank will graduate with *cum laude*, *magna cum laude* or *summa cum laude* honors.

- For details consult an academic advisor in the Office of Undergraduate Business Education and the University Honors Program Office.

BUSINESS HONORS SOCIETIES

Students may be nominated for or elected into an honors society based on specific departmental criteria. Contact the department for additional information.

Beta Gamma Sigma (Highest Honors in Business) (Undergraduate Business Education)
Beta Alpha Psi (Department of Accounting)

OTHER HONORS

Omicron Delta Epsilon (Department of Economics)
Hyperion Council (Undergraduate Business Education)
ACCOUNTING - Department Code: ACC

INTRODUCTION AND EDUCATIONAL OBJECTIVES

The objective of the program of studies in accounting is to prepare students to make a smooth transition from college into a successful and meaningful career in the professional practice of accounting, whether it be in public, private, or governmental accounting. Because of the professional aspects of accounting, equal emphasis is placed upon general education in the arts and humanities and the functioning of business enterprises, as well as the basic underlying concepts of accounting.

DEGREE PROGRAMS

An Accounting major can earn either a Bachelor of Business Administration (BBA) or a Bachelor of Science in Business Administration (BSBA) by meeting the appropriate School of Business Administration requirements.

MAJOR

The undergraduate curriculum consists of 24 semester hours of Accounting and three semester hours of Business Law beyond the Business Foundation and the Professional Core requirements.

The following courses are required:

<table>
<thead>
<tr>
<th>ACC301</th>
<th>ACC 402</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC311</td>
<td>ACC 403</td>
</tr>
<tr>
<td>ACC 312</td>
<td>ACC 404</td>
</tr>
<tr>
<td>ACC 406</td>
<td>ACC 411</td>
</tr>
<tr>
<td>BSL 401</td>
<td></td>
</tr>
</tbody>
</table>

To continue as an accounting major, a student must have a cumulative grade point average of 3.0 or higher in accounting before enrolling in ACC312. Students who have not completed ENG 230 must register for BUS 300 concurrently with ACC 312.

MINOR

The Department of Accounting allows business students to earn a minor in accounting. In addition to the general requirements for all business minors, business students wishing to minor in accounting must complete ACC301, ACC 311 and ACC 403.

Educational Requirements to Sit for the CPA Exam

Most of our students intend to become qualified as Certified Public Accountants (CPA). While the CPA exam is a national exam administered by the American Institute of Certified Public Accountants, its execution and licensing practices are governed by state law. For example,
some states require a certain number of credit hours in particular subjects and have overall accounting and business credit hour requirements. As such, you should check with the state in which you intend to practice to determine what the specific course requirements are for that state. Note our department is unable to make a determination of your eligibility to sit for the CPA exam. This can only be done by the appropriate state board. The licensure requirements for the State of Florida can be viewed at: http://www.myfloridalicense.com/dbpr/cpa/licensure.html

For your convenience, the Florida rules that apply to most individuals are summarized here. Please check the State of Florida Web site noted above for updates and rules which may apply in particular circumstances.

As of July 1, 2008 the Florida State Board of Accountancy (BOA) separated the requirements to become a Certified Public Accountant (CPA) into two parts: (1) the requirements to be eligible to take the CPA exam and (2) the requirements for licensure to practice as a CPA in Florida.

**Requirements to Sit for the CPA Exam:** To be eligible to take the CPA exam, you must have completed 120 semester hours including 24 semester hours of accounting (auditing, cost and managerial accounting, financial accounting, accounting information systems, and taxation) at the upper division level (300-level or above) and 24 semester hours in general business courses (including at least 6 semester hours of business law courses). One course can be at a lower lever (freshman or sophomore), the other course must be upper division (junior level or higher). The exam is offered in the following time periods; January – February, April – May, July – August and October – November. Note you do not have to have a bachelor’s degree in order to sit for the CPA exam.

**Requirements for Licensure:** In addition to passing all four parts of the CPA exam with at least a 75% within 18 month rolling period, the BOA requires that you have completed a bachelor’s degree plus an additional 30 hours for a total of 150 semester hours before you can become licensed as a CPA. One year of work experience under the supervision of a licensed CPA is now also required to become licensed. (This experience may be obtained before or after sitting for the exam, however, all requirements to sit for the exam must be met before the work experience commences.) If you fail to apply for licensure within three years of receiving the licensure package, (sent after you pass all four parts) the CPA grades expire and you have to retake the examination.

The 150 semester hours must include a minimum of 36 semester hours of accounting courses and at least 39 semester hours of general business courses. Excess upper division accounting courses may be used to meet the general business requirement. Courses for non-accounting majors and any MBA courses that are equivalent to elementary accounting are not accepted for this requirement.

**Licensed in Another State:** If you are licensed in a state other than Florida you can obtain a license in Florida by a process called endorsement. You must provide evidence of meeting all of the requirements in effect at the time of your application. In addition if you passed the exam more than two years before applying you must provide evidence of meeting continuing professional education requirements.
**Accreditation:** The Board accepts degrees from schools accredited by the following associations: Middle States Association, New England Association, North Central Association, Northwest Association, Southern Association of Colleges and Schools, Western Association of Schools and Colleges, Association of Independent Schools and Colleges who have been approved by the Florida State Board of Independent Colleges and Universities, and Canadian Schools who have been approved by their provincial educational bodies. If you have graduated from a school or college which is not accredited by the above mentioned means, then you must use the provisions of F.A.C. 61H1-27.001 (5) (see below).

**Duplicate Courses:** No credit will be given for courses which duplicate another course for which the applicant has received credit. Review courses are considered as duplicates.

For the CPA requirements in other states, you should consult the State Board of Accountancy for your state.

Many of our graduates satisfy the 30 semester hours requirement for the CPA by continuing on for a fifth year during which time they also can complete the requirements for either the Master of Accounting (MAcc) or Master of Science in Taxation (MST) degree. While the programs are similar in that they offer an opportunity to concentrate in accounting, they differ in degree of specialization and career path orientation. The MAcc program offers two tracks: Assurance (MAcc-Assurance) for students planning to go into public accounting and Corporate Accounting (MAcc-Corporate) for students planning careers as controllers/CFOs or financial analysts. The MST is designed for students interested in careers requiring a high degree of specialized tax knowledge in public accounting, private industry, and government. Students interested in these programs should consult with the Program Director within the Department of Accounting.

**ACCELERATED MASTER’S PROGRAMS**

In addition to offering the Master of Accounting (MAcc) and Master of Science in Taxation (MST) on the usual time frame involving one year of full-time study beyond the Bachelor’s level, the MAcc-Assurance Track, MAcc-Corporate Track, and MST are offered as accelerated programs. These programs permit high achieving accounting students who have accelerated their education by taking advanced courses in high school, testing out of classes, taking increased class loads, or going to summer school, to start their graduate work while seniors. The accelerated programs are available only to students who are undergraduate students at the University of Miami. The programs are designed in such a way that students can expect to complete both their Bachelor’s and Master’s degrees and make significant progress on the CPA exam (if not complete it entirely) within 4½ years. In addition, these programs are extremely price competitive.

**Accelerated Program Timeline**

1. Internship in summer after junior year
2. Twelve credits of work in senior year will count towards their graduate degree (only students in the accelerated programs will be permitted to take these classes during their senior year).
3. In summer after senior year take one graduate course, CPA review course, and CPA exam.
4. Complete remaining credits of graduate work in fall semester after senior year.

Prerequisites

The following must be completed before students begin their senior year:

- A minimum of 102 credit hours
- 15 credit hours of the 21-hour Professional Business Core including CIS 410, ECO 302, FIN 302, MGT 303, and MGT 304. (MGT 401 must be taken in the final semester and FIN 303 will be taken as the core elective in the senior year.)
- The following Accounting major requirements: ACC 301, ACC 311, ACC 312, ACC 402 ACC 403, and BSL401.
- All other requirements for a Bachelor's degree other than those that will be satisfied through completion of the undergraduate courses taken while in senior-graduate status.

Senior Year Curriculum (Senior-Graduate Status)

The curriculum for the senior year is the same for all tracks (except that students selecting the MAcc-Corporate track must complete FIN 303 in order to take the graduate finance courses required for the track) and consists of 14 credits in the fall and 16 credits in the spring semester as follows:

Fall Semester Senior Year

Recommended Sequence:
ACC 404 Advanced Taxation (3 credits)
ACC 406 Accounting Systems (3 credits)
FIN 303 Intermediate Financial Management (3 credits)

Courses offered only in the fall:
ACC 524 Accounting for Governmental and Not-for-profit Entities (2 credits)
ACC 530 International Financial Reporting Standards (1 credit)
BSL 691 The Public Corporation (2 credits)

Spring Semester Senior Year

Recommended Sequence:
ACC 411 Advanced Accounting (3 credits)
MGT 401 Strategic Management (3 credits)
One other non-accounting undergraduate course (3 credits)

Courses offered only in the spring:
ACC 643 Tax Research (2 credits)
ACC 522 Advanced Issues in Auditing (3 credits)
BUS 602 Critical Thinking and Effective Writing (1 credit)
BUS 603 Critical Thinking and Effective Presentations (1 credit)
Students should select their track (MAcc-Assurance, MAcc-Corporate, or MST) by the spring semester of their senior year before registering for their final fall graduate classes.

**Summer after Senior Year**

Students must take one 2 or 3-credit graduate accounting course. Accounting courses are offered based on demand and could include ACC 620: Accounting Controls in IT (offered every summer) or ACC 649: Issues in Tax Policy.

To graduate on time you are REQUIRED to take an approved CPA review course during the summer following your senior year after you graduate. If you do not take a CPA review course you will have to register and pay for an additional six graduate credits in the next spring semester and you will graduate from graduate school a semester late, in May instead of December. Students would also be expected to pass part, if not all of the CPA exam during this summer.

**Final Fall Semester**

In the final fall semester students will complete the remaining 15 or 16 graduate credits including the requirements for their track and electives selected in consultation with the Program Director.

**Admission to the Accelerated Programs**

**Incoming Freshmen**

- Prospective students apply to the accelerated program when they apply for admission to the University of Miami.
- SAT scores should meet or exceed 1400; high school unweighted GPA should meet or exceed 3.75.
- Students are required to have an overall and accounting GPA of 3.0 or higher by their junior year in college and to maintain this GPA after their junior year.
- Students will need to have completed 102 credit hours by the start of their senior year.

**Current University of Miami Undergraduate Accounting Majors**

- Students apply to the accelerated program by February 1 of their junior year.
- Admission to the program will be primarily based on GPA and letters of recommendation. It is expected that the students admitted to the program will have GPAs exceeding 3.50, but students with these scores are not guaranteed admission. The decision will depend on the quality and size of the application pool and will be made by senior school administrators and faculty.
- After admission, students must maintain an overall GPA of 3.0 or higher and an accounting GPA of 3.0 or higher to remain eligible.
- Students will need to have completed 102 credit hours by the start of their senior year including ACC 301, ACC 311, ACC 312, ACC 402, ACC 403, and BSL 301 or 401.
International Designation Requirements

Admission to this accelerated program is expected to be more competitive given the small number of international internships that will be available.

Incoming Freshman Admission Requirements
- Applicants must meet the freshman admission requirements of the accelerated program,
- Maintain an overall GPA of 3.00 or higher and an accounting GPA of 3.25 or higher, and
- Demonstrate proficiency in a second language.

Current University of Miami Undergraduate Accounting Major Admission Requirements
- Applicants must meet accelerated program admission requirements,
- Have an overall and accounting GPA of 3.5 or higher, and
- Demonstrate proficiency in a second language.

Accounting Course Listing
BUSINESS LAW - Department Code: BSL

Introduction

The modern manager faces increasing legal implications in daily operations and in formulating business policy. Consequently, effective decision-making requires an appreciation of the social, ethical, economic, and political bases of law as it relates to business. Business law courses provide the student with fundamental insight into legal institutions, the regulatory environment, and the nature of legal discourse, as well as an array of substantive principles of law, including such areas as contracts, sales, business organizations, and domestic and international commercial relationships.

Educational Objectives

The primary goals of the Department of Business Law are to contribute to legal knowledge through conducting scholarly research, to disseminate it by publication in leading journals and law reviews, and to transmit that knowledge to students and the larger UM-wide, business, and professional communities.

These goals both inform and drive the Department’s educational objectives, which focus on:

- instilling in students a strong sense of the legal and ethical issues permeating business;
- aiding students’ comprehension of the legal and regulatory environment as well as the ethical considerations and substantive laws that shape business practices and policies; and
- developing students’ analytical and problem solving ability, as well as their oral and written presentation skills.

Degree Programs

A Legal Studies major can earn either a Bachelor of Business Administration (BBA) or a Bachelor of Science in Business Administration (BSBA) by meeting the appropriate School of Business Administration requirements.

Major

A student may major in Legal Studies. This course of study facilitates the interaction between legal counsel and the business manager, preparing graduates to excel in a wide variety of business pursuits. A flexible, inherently cross-disciplinary course of study, the Legal Studies major can facilitate careers in such fields as risk management, compliance, human relations, marketing, finance and accounting, general business or non-profit management, health care, government, and small business ownership/entrepreneurship. For some, it may also provide an appropriate foundation for the professional study of law.
The following comprises the coursework for a major in Legal Studies:

BSL212  Introduction to Business Law (required)
BSL485  Managing the Legal Factor (required in the student’s final semester)

and

Twelve (12) additional semester hours taken from the departmental offerings listed below:

BSL304  Corporate Law
BSL305  Legal and Social Aspects of Business Regulation
BSL313  Coastal Law
BSL314  Ocean Law
BSL333  Legal Aspects of Real Estate Transactions
BSL 401  The Law of Financial Transactions
BSL412  International Business Law
BSL424  Intellectual Property Law
BSL460  Health Care Law and Ethics

**MINOR**

Students in the School of Business Administration as well as students in the other schools and colleges of the University of Miami may minor in Business Law. Like the Legal Studies major, the minor is a flexible one, permitting business and non-business students alike to augment their studies with an appreciation of the role of law and ethics in global citizenship as well as in the student’s chosen corporate, creative, scientific, academic, professional, or personal endeavors.

Twelve semester hours are required for the minor, including BSL 212 and BSL 485, plus six (6) additional semester hours taken from departmental offerings, excluding BSL 575.

[Business Law Course Listing](#)
INTRODUCTION

The Department of Computer Information Systems serves the University as the focus for employing Information Technology / Information Management in the efficient solution of the entire range of business problems.

The administration and management of today’s business and government organizations rely heavily upon information management for the efficient achievement of their goals. Collection, storage, and retrieval of data by computers are involved in the wide range of business activities including daily operations, management decision-making, and long-range planning. As the dependence of management on Information Technology grows, so does the need for Information Technology specialists. The courses and degree programs are described below.

EDUCATIONAL OBJECTIVES

The Computer Information Systems major is designed to provide the student with the key information technology and management skills needed in today’s business environment, plus a firm grounding in the major business areas in which these skills will be applied. Graduates of the program may qualify for entry-level positions as programmers, systems analysts, consultants, user support analysts, or other information management positions.

DEGREE PROGRAMS

A Computer Information Systems major can earn either a Bachelor in Business Administration (BBA) or a Bachelor of Science in Business Administration (BSBA) by meeting the appropriate School of Business Administration requirements.

MAJOR

Required Core (18 semester hours)
- CIS320 Introduction to Programming
- CIS324 Object-Oriented Programming in Java
- CIS360 Systems Analysis and Design
- CIS423 Database Management Systems
- CIS430 Business Telecommunications
- CIS465 Applied Software Project Development

Technical Electives (3 semester hours)
- CIS390-399 Topics in Computer Information Systems (with Departmental approval)
- CIS450 Introduction to Health Informatics
- CIS493 Fundamentals of IT Project Management
- CIS498 Entrepreneurship: Technology and Innovation
CIS490-498  Topics in Computer Information Systems (with Departmental approval)
CIS499  Directed Study in Computer Information Systems (with Departmental approval)
CIS550  Computer Information Systems Internship (with Departmental approval)

**Note:** All major courses must be completed with a grade of “C-” or better. In addition, an overall grade point average of 2.5 or higher is required for all courses in the major.

**MINOR**

The minor in Computer Information Systems consists of:

- CIS320  Introduction to Programming
- CIS360  Systems Analysis and Design

*and*

Six (6) additional semester hours taken from the departmental offerings listed below:

- CIS324  Object-Oriented Programming in Java
- CIS423  Database Management Systems
- CIS430  Business Telecommunications
- CIS450  Introduction to Health Informatics
- CIS493  Fundamentals of IT Project Management
- CIS498  Entrepreneurship: Technology and Innovation

[Computer Information Systems Course Listing](#)
ECONOMICS – Department Code: ECO

INTRODUCTION AND EDUCATIONAL OBJECTIVES

Economics uses the idea of maximizing behavior to provide a unified framework for studying human action. The economics curriculum is designed to give students an understanding of economic theory and its application to a wide range of human behavior. The program provides excellent preparation for careers in business, in government, and in international agencies. It is particularly recommended for students planning graduate study or professional training in fields such as law, business, international studies, public administration, and economics.

DEGREE PROGRAMS

An Economics major can earn either a Bachelor of Business Administration (BBA) or a Bachelor of Science in Business Administration (BSBA) by meeting the appropriate School of Business Administration requirements.

MAJOR

The major in economics consists of at least 24 semester hours, which must include:

ECO211  
ECO212  
ECO301  
ECO302  
MTH130 or MAS110 or a higher calculus course is required of all Economics majors and minors. The calculus course must be completed before enrolling in ECO302.

MINOR

Business students may minor in economics by taking nine semester hours in addition to the business core courses of ECO211, ECO212, and ECO302.

Non-business students in any school or college may minor in economics. Non-business students are required to take ECO211, ECO212, ECO302 and two additional economics courses for a total of 15 semester hours.

Note: All courses submitted for the major or minor must be completed with a grade of “C-” or higher and with an overall grade point average of “C” or higher.

Academically qualified students may elect to take courses from the Department’s curriculum for Honors credit.

Members of the Department are prepared to counsel students in the selection of courses and in other matters relating to the preparation for careers. Economics may be the major of a candidate for the Master of Arts and Doctor of Philosophy degrees. Consult the Graduate Bulletin for the program general requirements.

Economics Course Listing
FINANCE - Department Code: FIN

Finance

INTRODUCTION

The finance major is designed to prepare students for a wide variety of careers. Because finance is focused on valuation and decision making, it is applicable to virtually every possible type of organization.

EDUCATIONAL OBJECTIVES

The finance discipline is focused on two primary issues. The first is determining value. The second is making the best decisions with respect to value. We study these issues in a variety of contexts and industries. The three primary areas of finance are financial management, investments, and financial markets and intermediaries. Financial management focuses on how an organization can accomplish its mission. For example, a corporation seeks to create and maintain wealth, and a non-profit organization seeks to improve the world in some way. All organizations want to achieve their mission to the greatest extent possible, and that requires making the best decisions with respect to value. The area of investments studies the purchase and sale of financial securities, such as stocks, bonds, options, and futures from the point of view of an investor. Financial markets are created to facilitate the trading (buying/selling) of financial securities. Financial intermediaries sell claims on themselves to investors, such as stock, life insurance, or a bank deposit. Financial intermediaries then invest the money from such sales in other assets such as loans, real estate, or other financial securities.

DEGREE PROGRAMS

A Finance major can earn either a Bachelor of Business Administration (BBA) or a Bachelor of Science in Business Administration (BSBA) by meeting the appropriate School of Business Administration requirements.

Majors
Finance
International Finance and Marketing
Real Estate

Minors
Finance

FINANCE MAJOR

Important Note: To major in finance, a student must earn a grade of “B” (grade point of 3.0) or higher in FIN302 (note that a grade of “B-“ does not qualify), and have a cumulative University of Miami grade point average of 2.5 or higher, after having completed FIN302.

The Finance major consists of a minimum of 18 semester hours beyond the core course, FIN302.
Required Courses                  Prerequisites
FIN303  Intermediate Financial Management  FIN302
FIN320  Investment and Security Markets  FIN302
and

Twelve (12) additional semester hours taken from the departmental offerings, excluding FIN300. Six (6) of the semester hours must be taken at the 400 or 500 level.

Note: Students are strongly encouraged to take FIN303 and FIN320 during the same semester.

MINOR

A minor in Finance consists of 12 semester hours as follows:
FIN302
FIN303
FIN320
and

One (1) additional finance course at the 300, 400, or 500 level, excluding FIN300.

All courses must be taken within the current prerequisite structure.

Finance Course Listing
**INTERNATIONAL FINANCE AND MARKETING**  
Finance - Department Code: FIN  
Marketing - Department Code: MKT

**INTRODUCTION**

The International Finance and Marketing (IFM) major is aimed at meeting the needs of students who want to pursue a career in international business, finance, and/or marketing.

**EDUCATIONAL OBJECTIVES**

The IFM major is designed to prepare students for the most critical areas of decision making in international business. The objective is to provide students with a comprehensive curriculum based on a strong program of international courses, and create opportunities for access to multinational companies and the international business community.

**INTERNATIONAL FINANCE AND MARKETING MAJOR**

*Important Note:* To major in IFM, a student must earn a grade of “B” (grade point of 3.0) or higher in both FIN302 and MKT201/301 (note that a grade of “B-” does not qualify). The IFM major consists of a minimum of 21 semester hours beyond the core (FIN302 and MKT201/301). The IFM course requirements are:

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIN320 Investment and Security Markets</td>
<td>FIN302</td>
</tr>
<tr>
<td>FIN330 International Finance</td>
<td>FIN302</td>
</tr>
<tr>
<td>FIN431 International Financial Management</td>
<td>FIN302, FIN330</td>
</tr>
<tr>
<td>MKT302 Marketing Research and Market Analysis</td>
<td>MKT201/301, and MAS202</td>
</tr>
<tr>
<td>MKT360 International Marketing</td>
<td>MKT201/301</td>
</tr>
<tr>
<td>MKT469 International Marketing Management</td>
<td>MKT302 (Pre or co-requisite) and MKT360</td>
</tr>
</tbody>
</table>

*and*

One (1) additional finance course at the 400 level.  
All courses must be taken within the current prerequisite structure. Of special note: some 400 level finance courses require FIN303.
REAL ESTATE
FINANCE - Department Code: FIN

INTRODUCTION

The Real Estate major in the Business School is created for students who want to apply the theoretical and analytical concepts of finance to real estate lending, investment and development.

EDUCATIONAL OBJECTIVES

The importance of understanding developments in real estate and mortgage markets and the integration of real estate investments into the national and international economy have led to increased interest in this important field. The real estate major strengthens ties with important segments of the business community and builds on the University's strategic strengths in architecture (New Urbanism) and urban planning.

REAL ESTATE MAJOR

Important Note: To major in Real Estate, a student must earn a grade of “B” (grade point of 3.0) or higher in FIN302 (note that a grade of “B-” does not qualify). Real Estate Majors should consider taking the courses necessary to meet the requirements of the Urban Studies Minor (For more information, contact the Director of the Urban Studies Program, Dr. Jan Nijman: 305-284-6692 or Nijman@miami.edu.)

The Real Estate Major consists of a minimum of 18 semester hours beyond the core (FIN302). The following courses beyond the School of Business Administration core are required:

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select either:</td>
<td></td>
</tr>
<tr>
<td>FIN 303 Intermediate Financial Management</td>
<td>FIN302</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>FIN 320 Investment and Security Markets</td>
<td>FIN302</td>
</tr>
</tbody>
</table>

Note: In choosing to take FIN303 and/or FIN320, students are strongly advised to consider the prerequisites of 400 level classes they might want to take later.

Select two courses from the following:
- FIN427 Fixed Income Markets and Analysis
- FIN444 Real Estate Investment and Appraisal
- FIN445 Real Estate Finance

and
- BSL333 Real Estate Law
- ARC584 Introduction to Real Estate Development and New Urbanism

and
One (1) additional Finance or Business Law course at the 300 or 400 level available to be taken within the current pre-requisite structure.
Note: Students who do not already possess a valid real estate salespersons license may want to take Finance 340 (Principles of Real Estate) as their 300- or 400-level elective course.

Note: Students who have an interest in the marketing aspect of the real estate industry should also consider taking Marketing 340 (Personal Selling) as the upper-core elective in their program.
INTRODUCTION

The Department of Management in the School of Business Administration is the largest of the eight academic departments, and is heterogeneous with respect to both research and teaching areas. Faculty are specialized in and teach courses that span a number of fields including entrepreneurship, health care management and policy, human resources, international management, leadership, operations management, organizational behavior, strategic management, supply chain management, and teams. Given both the multinational context and diversity present in 21st century organizations, coursework in the Department of Management is focused on preparing students to be productive and effective contributors to the various communities they are embedded within or impact. Management majors pursue a variety of careers after graduation including law schools, advanced graduate degrees, starting businesses, running family businesses or accepting management positions in domestic or international organizations.

EDUCATIONAL OBJECTIVES

- Development of critical thinking skills to evaluate decision choices, challenges, and issues confronting managers today;
- Improvement of interpersonal skills and learning to work effectively in teams;
- An understanding of the tools, methods, and procedures used to successfully lead people and organizations;
- Awareness of the ethical issues and responsibilities inherent in being a member of the global business community.

DEGREE PROGRAMS

Any major from the Department of Management may earn either a Bachelor of Business Administration (BBA) or a Bachelor of Science in Business Administration (BSBA) by meeting the appropriate School of Business Administration requirements.

MAJORS

Note: All major and/or minor courses in the Department of Management must be completed with a grade of “C” or higher and with an overall grade point average of 2.5 or higher.
The Department of Management offers the following four majors:

**MANAGEMENT MAJOR**

The MGT major will prepare students for future careers in all areas of management, including small business and corporate levels. The MGT major provides a solid preparation for students interested in pursuing other graduate degree programs, particularly in law and business.

A major in Management consists of at least 21 semester hours, but not more than 27, in departmental courses completed with a grade of “C” or higher. Any one course may not be applied toward more than one major in the Department of Management. All majors must include:

- MGT302 Human Resource Management
- MGT303 Operations Management
- MGT304 Organizational Behavior
- MGT307 Advanced Organizational Behavior [prerequisite MGT304]

Plus nine semester hours from the Department of Management (excluding MGT100 and MGT401).

**ENTREPRENEURSHIP MAJOR**

The entrepreneurship major prepares students to engage in the process of value creation, regardless of organizational context. Students will develop a holistic view of organizational creation and change that is applicable to either starting a new venture (for profit or nonprofit), or working effectively within an existing organization. The required curriculum is a total of 18 semester hours and includes the following 4 required courses and 2 additional electives:

1. MGT353 Introduction to Entrepreneurship (FIN302 must be taken prior to or concurrently with MGT353)
2. MGT454 Business Planning for Entrepreneurs (prerequisite MGT353)
3. MGT455 Entrepreneurial Consulting (prerequisites MGT353, MGT454)
4. FIN308 Finance for Entrepreneurs (prerequisite FIN 302)

Choose at least 6 credits (2 electives) from the following:

- MGT251 (recommended), MGT349, MGT360, or MGT498/598 (if approved as selected topics in entrepreneurship ONLY);
- FIN303, FIN320, FIN410, or FIN425;
- MKT302, MKT310, MKT320, MKT340; MKT385;
- BSL424 (recommended).

All courses must be taken within the current prerequisite structure.
HEALTH SECTOR MANAGEMENT AND POLICY MAJOR

The HSMP major is designed for students who aspire to pursue a career in health management and policy, in a variety of health care organizations and public settings. The major enables students to gain skills and understanding in the specialized language of health care and to comprehend concepts of management, financing, politics, law and ethics as applied to the health care sector. The major is also ideal for students intending to seek advanced degrees in health administration, health economics, medical sociology, or public health.

The total requirements for the major are 21 semester hours. These requirements include:

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Pre-requisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>All of the following required courses:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MGT 270</td>
<td>Introduction to Health Sector Administration</td>
<td>None</td>
</tr>
<tr>
<td>ECO 386</td>
<td>Health Economics</td>
<td>ECO 302</td>
</tr>
<tr>
<td>BSL 460</td>
<td>Health Care Law and Ethics</td>
<td>BSL 212</td>
</tr>
<tr>
<td>ACC 315</td>
<td>Accounting for Health Care Organizations</td>
<td>ACC 211 &amp; 212</td>
</tr>
<tr>
<td>MKT 388</td>
<td>Health Care Marketing</td>
<td>MKT 201 or 301</td>
</tr>
<tr>
<td>CIS 450</td>
<td>Introduction to Health Informatics</td>
<td>Junior Standing</td>
</tr>
<tr>
<td></td>
<td>At least one of the following elective courses:</td>
<td></td>
</tr>
<tr>
<td>APY 413</td>
<td>Medical Anthropology</td>
<td>3cr APY &amp; 3cr BIL or NUR</td>
</tr>
<tr>
<td>SOC 351</td>
<td>Business and Society</td>
<td>SOC 101</td>
</tr>
<tr>
<td>POL 536</td>
<td>U.S. Health Care Crises: Politics and Policies</td>
<td>Junior Standing</td>
</tr>
<tr>
<td>INS 570</td>
<td>Globalization and Public Health</td>
<td>Junior Standing</td>
</tr>
<tr>
<td>INS 571</td>
<td>International Development &amp; Human Welfare</td>
<td>Junior Standing</td>
</tr>
<tr>
<td>INS 572</td>
<td>International Health Policy and Ethics</td>
<td>Junior Standing</td>
</tr>
<tr>
<td>INS 573</td>
<td>US Foreign Policy and Global Health:</td>
<td>Junior Standing</td>
</tr>
<tr>
<td>AAS 390</td>
<td>SP Topics: Race and Health Care in America</td>
<td>Permission of Instructor</td>
</tr>
<tr>
<td>HCS 206</td>
<td>Introduction to Public Health</td>
<td>None</td>
</tr>
<tr>
<td>HCS 305</td>
<td>Issues in Health Disparities</td>
<td>HCS 206</td>
</tr>
<tr>
<td>HCS 309</td>
<td>Health and Environment</td>
<td>Permission of Instructor</td>
</tr>
<tr>
<td>HCS 310</td>
<td>Global Health</td>
<td>HCS 206</td>
</tr>
</tbody>
</table>

HUMAN RESOURCE MANAGEMENT MAJOR

The HRM major is for students who intend to pursue a career in human resources or personnel. The total major requirement is 15 semester hours and requires:

MGT302 Human Resource Management  
(Must be taken during junior year for sequencing)

MGT307 Advanced Organizational Behavior (prerequisite MGT304)  
and

Nine semester hours from the following courses:

MGT308 Training and Development (prerequisite MGT302)  
MGT360 Effective Leadership (prerequisite MGT304)  
MGT428 Wage and Salary Administration (prerequisite MGT302)  
MGT480 Organizational Development and Change (prerequisites MGT302, MGT304)  
MGT422 Leading Teams (prerequisite MGT304)  
PSY332 Tests and Measurements (check prerequisites)

All courses must be taken within the current prerequisite structure.
MINORS

Minor in Management for Business Students
A minor in this area for business students (MGTB) consists of 12 semester hours in MGT courses beyond the required MGT courses for the BBA or BSBA degree.

Minor in Management for Non-Business Students
A minor in this area for non-business students (MGT) consists of 12 semester hours and must include the following courses:
MGT302 Human Resource Management  
MGT303 Operations Management  
MGT304 Organizational Behavior  
Plus one additional 300 level or higher course from the Department of Management.

Minor in Health Sector Management and Policy
The purpose of the minor in Health Sector Management and Policy (HSMP) is to provide the student with a basic understanding of the management, economic and financial structure, as well as the legal, ethical and governmental policy of the health care industry. Appropriate candidates for this minor would include: students in any UM School or College interested in exploring the health care sector, working in the legal, management or policy making aspects of the health care sector or those wanting to have an augmentation to their pre-med, pre-law or pre-MBA, MPA or MPH studies as well as those pursuing a Ph.D. The minor in this area consists of the following four courses:

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MGT270 Introduction to Health Sector Administration</td>
<td>ECO211, ECO212, ECO302</td>
</tr>
<tr>
<td>ECO386 Health Economics</td>
<td></td>
</tr>
<tr>
<td>BSL460 Health Care Law and Ethics</td>
<td>BSL212</td>
</tr>
<tr>
<td>POL536 US Health Care Crisis: Politics and Policies</td>
<td>Junior Standing</td>
</tr>
</tbody>
</table>

Minor in Entrepreneurship for Business Students
Eligible business students must have a declared business major other than Entrepreneurship. Two specialized tracks are offered for business students who are interested in minoring in Entrepreneurship. Specifically:

High Growth/Technology Ventures (ENBT)
- MGT353/Introduction to Entrepreneurship
- MGT454/Business Planning for Entrepreneurs
- FIN320/Investment and Security Markets OR FIN425/Business and Security Valuations
- MGT498/Entrepreneurship: Launching Hi-Tech Ventures OR CIS410/Information Systems and Technology (applicable only for BSBA students)

Health Care Ventures (ENBH)
- MGT353/Introduction to Entrepreneurship
- MGT454/Business Planning for Entrepreneurs
- MGT270/Introduction to Health Sector Administration
- BSL460/Health Care Law and Ethics
Minor in Entrepreneurship for Non-Business Students (ENT)

This minor is for non-business students interested in developing business plans, or learning more about how to initiate and manage small business enterprises. Eligible UM students must be enrolled, and have a declared major outside of the School of Business Administration. An Entrepreneurship minor for non-business students consists of 6 courses, 18 credits as follows:

- ACC211 Principles of Financial Accounting
- ECO211 Economic Principles and Problems
- MKT301 Marketing Foundations
- FIN300 Finance for Non-Business Majors
- MGT251 Nature and Foundations of Entrepreneurship
- MGT353 Introduction to Entrepreneurship

Management Course Listing
MANAGEMENT SCIENCE - Department Code: MAS

Management Science

INTRODUCTION

Management Science uses the ideas and methods of science, mathematics, statistics, and computing to help managers make better decisions. Management Science had its modern origins in the study of military operations during World War II; hence this field of study may also be called Operations Research. Today, Management Science/Operations Research, often referred to as Analytics, is applied in a wide variety of areas including financial modeling, marketing research, organizational theory, transportation and logistics, health care, environmental protection, and manufacturing. Almost any decision you make can benefit from the methods of Management Science.

EDUCATIONAL OBJECTIVES

The curriculum in the Department of Management Science is designed to give students the necessary educational background and experience to allow them to work as successful Management Science analysts. In addition to the general education, business, and economics courses of the Bachelor of Science in Business Administration degree program, the major in Management Science requires a solid background in the natural sciences and mathematics. Additionally, students are required to take sequences of courses in calculus-based statistics, deterministic and stochastic modeling, and computer programming. A number of the courses in the curriculum require projects that have students evaluate a real-world system or process. As the system is studied and modeled, the students apply the methods of Management Science to find ways to improve the process. The written and oral presentation of their findings is part of the learning and evaluation process. A major or minor in Management Science is recommended to qualified students as preparation for direct entry into the field of Management Science/Operations Research/Analytics or as preparation for future graduate studies.

DEGREE PROGRAMS

The Bachelor of Science in Business Administration (BSBA) is awarded for the major in Management Science by meeting the appropriate School of Business Administration requirements.

MAJOR

The Department of Management Science offers both a major and minor for students pursuing the Bachelor of Science in Business Administration degree. All required courses within the major or minor in Management Science must be completed with a grade of “C-” or higher. Additionally, the cumulative grade point average of the Management Science major or minor course work must be 2.5 or higher. The coursework for obtaining a major in Management Science is as follows:
Required Core (15 semester hours)
MAS441 Deterministic Models in Operations Research
MAS442 Stochastic Models in Operations Research
MAS452 Systems Analysis Methodology and Applications
MAS547 Computer Simulation Systems
CIS320 Introduction to Programming
and
One (1) of the following courses:
CIS323 Object-Oriented Programming in C++
CIS324 Object-Oriented Programming in Java
CIS360 Analysis of Information Systems
MAS548 Data Mining

MINOR

Available only for majors in the Bachelor of Science in Business Administration.
The coursework required for a minor in Management Science is as follows:

MAS441 Deterministic Models in Operations Research
MAS442 Stochastic Models in Operations Research
MAS452 Systems Analysis Methodology and Applications
All courses must be taken within the current prerequisite structure.

DEPARTMENTAL HONORS

Students interested in having departmental honors entered on their diploma must meet the
general requirements outlined by the School of Business Administration and must complete
the departmental course requirements with a grade of “B+” or higher. Students interested
in having departmental honors must also complete a three semester hour thesis/project
under MAS499 Directed Study, as part of their electives. This project must be approved by
the Department Chair by the end of the student’s junior year (90 semester hours) of study.
Students wishing to be considered for graduation magna cum laude or summa cum laude
are required to write an honors thesis. These students must confer with the department
chairman to select a thesis topic at the end of their junior year (90 semester hours) of study.

Management Science Course Listing
MARKETING - Department Code: MKT

INTRODUCTION

Rapidly increasing global competition, emergence of new markets, and technological advancements make today’s marketplace a highly dynamic and challenging environment for companies. Effective marketing is therefore crucial for organizations to survive and prosper in such an environment. Marketing is the process through which organizations develop and distribute products and services that satisfy the needs of customers. Customer satisfaction is critical to the profitable operations and growth of organizations and, as such, an integral component of modern-day marketing.

EDUCATIONAL OBJECTIVES

The primary goals of the Department of Marketing are: (a) to contribute to marketing knowledge through conducting scholarly research and disseminating the research findings through leading journals, (b) to excel in imparting marketing knowledge to students and honing their critical-thinking skills so as to prepare them for potentially successful careers in an increasingly competitive, dynamic, global, and service-and technology-oriented environment, and (c) to be of service to the business and professional communities at large.

The marketing curriculum offers courses and programs to undergraduate and graduate students for their professional development in domestic and world business.

A program of study in marketing offers students better understanding of and insights into:

- Marketing’s role within the organization and society;
- The various ‘markets’ for goods and services through better identification and analysis of consumer needs, wants, and interests;
- Marketing’s responsibility to society in legal, ethical, and moral matters;
- Methods, procedures and techniques used in planning and managing marketing decisions.

DEGREE PROGRAMS

A Marketing major can earn either a Bachelor of Business Administration (BBA) or a Bachelor of Science in Business Administration (BSBA) by meeting the appropriate School of Business Administration requirements.

MAJOR

The Marketing major provides students with an understanding of the basic concepts of marketing with an emphasis on emerging techniques and technologies. This major prepares students to practice marketing in a changing competitive environment. Specifically the major covers the 4 Ps of marketing (i.e., product/service, price, promotion and
place/distribution) from a managerial perspective. Additionally, the marketing major is flexible, allowing students to concentrate on specific areas of professional pursuit such as sales management, advertising, retailing, or marketing research.

A program of study in marketing offers students a comprehensive understanding of such topics as:

- Marketing’s critical role within organizations;
- Identification of markets for products and services through better understanding and analysis of consumers’ wants and needs;
- The nature of global competition and identification of viable competitive strategies;
- Methods used in planning and implementing marketing strategies;
- Legal and ethical responsibilities of marketers.

**MAJOR**

The program of study for Marketing majors consists of the following:

**Important Note:** A student must earn a grade of "B" (*grade point average of 3.0*) or higher in MKT201/301 to continue the major or minor (a grade of “B-” does not qualify.) The overall grade point average in all Marketing courses taken must be 2.5 or higher. All Marketing courses in which a Marketing major enrolls will count toward the major.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MKT302</td>
<td>Marketing Research and Market Analysis</td>
<td>MKT201/301 and MAS202</td>
</tr>
<tr>
<td>MKT403</td>
<td>Marketing Management</td>
<td>MKT201/301, FIN302, MKT302 (May also be Co-requisite)</td>
</tr>
</tbody>
</table>

**and**

Nine (9) semester hours from any of the courses listed below:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MKT310</td>
<td>Consumer Behavior &amp; Marketing Strategy</td>
<td>MKT201/301</td>
</tr>
<tr>
<td>MKT320</td>
<td>Retailing</td>
<td>MKT201/301</td>
</tr>
<tr>
<td>MKT340</td>
<td>Professional Selling</td>
<td>MKT201/301</td>
</tr>
<tr>
<td>MKT360</td>
<td>International Marketing</td>
<td>MKT201/301</td>
</tr>
<tr>
<td>MKT380</td>
<td>New Product Development</td>
<td>MKT201/301</td>
</tr>
<tr>
<td>MKT385</td>
<td>Marketing for Entrepreneurs</td>
<td>MKT201/301</td>
</tr>
<tr>
<td>MKT386</td>
<td>Advertising Management</td>
<td>MKT201/301</td>
</tr>
<tr>
<td>MKT387</td>
<td>Internet Marketing</td>
<td>MKT201/301</td>
</tr>
<tr>
<td>MKT388</td>
<td>Health Care Marketing</td>
<td>MKT201/301 or Permission by the Department Chair</td>
</tr>
<tr>
<td>MKT469</td>
<td>International Marketing Management</td>
<td>MKT 302 (Pre or co-requisite) and MKT360</td>
</tr>
</tbody>
</table>
MINOR

A minor in Marketing for business majors consists of at least 12 semester hours of marketing courses and must include the following: MKT201/301, with a grade of “B” (grade point average of 3.0) or higher (a grade of “B-” does not qualify), plus any three courses from the Department of Marketing as long as the prerequisite courses are taken. The overall grade point average in all marketing courses taken must be 2.5 or higher. All marketing courses in which a Marketing minor enrolls will count toward the minor.

MINOR FOR NON-BUSINESS MAJORS

A minor in Marketing for non-business majors consists of at least 12 semester hours of marketing courses and must include the following: MKT201/301 with a grade of “B” (grade point average of 3.0) or higher, plus any three courses from the Department of Marketing as long as the prerequisite courses are taken. Students may choose from MKT310, MKT320, MKT340, MKT360 or other electives with the permission of the department’s chair. The overall grade point average in all marketing courses must be 2.5 or higher. All marketing courses in which a Marketing minor enrolls will count toward the minor.

Marketing Course Listing
INTRODUCTION

The School of Communication houses four departments that offer courses in nine majors leading to the Bachelor of Science in Communication degree. The departments are: Cinema and Interactive Media (Motion Pictures), Communication Studies (Communication Studies), Journalism and Media Management (Broadcast Journalism, Electronic Media, Journalism, Media Management, Visual Journalism), and Strategic Communication (Advertising, Public Relations). In addition, the Master of Arts, Master of Fine Arts, and Doctor of Philosophy degrees are offered in the School.

Students engage with a diverse faculty of communication scholars, artists and professionals in a variety of hands-on learning experiences embracing research, writing, production, creative problem-solving and multimedia storytelling. On-campus television and radio facilities, motion picture studios and multimedia labs are available for academic and extra-curricular student projects. Students utilize contemporary digital imaging technology and learn skills that cut across a variety of media platforms. Digital editing, recording and mixing facilities are available. New media technology is incorporated throughout the curriculum and the School has several computer labs and digitally "smart” classrooms.

Two video-conference centers with broadcast-quality interactive capability for remote interviews and programming support the School’s mission. The School also houses three TV studios, including a fiber-optic linked studio allowing real-time, broadcast-quality transmissions to sites around the world. Under Communication faculty supervision, student-produced programming is distributed through the University’s cable facility and carried throughout the community by the local cable operator and is available through online streaming. The School operates several online sites that afford students outlets for multimedia and cross-platform writing, research, reporting and creative work.

The University’s FM radio station, and student online and print newspapers and magazines, offer additional opportunities for career development. The School also operates PRADUM, a student-run advertising and public relations agency. The Bill Cosford Cinema, a 250-seat theatre, supports the motion picture program and offers film programming for the Miami community. The School’s Norton Herrick Center for Motion Picture Studies is dedicated to research into the history and aesthetics of motion pictures and their social and cultural impact.

The School’s Knight Center for International Media supports innovative research and development dedicated to a broad spectrum of interdisciplinary communication study. The Center has produced a variety of special projects including documentary motion pictures, specialized research and global issue-oriented faculty/student initiatives. Two endowed Knight Chairs bring additional expertise and international perspective to the School’s research and learning experience.

The School supports student chapters of the American Advertising Association, the Public Relations Society of America, the Society of Professional Journalists, the National Broadcasting Society, the University Film and Video Association and other professional organizations. In addition, the School sponsors a nationally competitive intercollegiate debate team, which annually produces several members of the All American Debate Team.
Internships in professional settings are available to Communication students at the junior and senior levels. Professionals at daily and weekly newspapers, magazines, news bureaus, cable systems, radio and television stations and networks, production houses and motion picture studios cooperate in the faculty-supervised internships. Executives of city and county governments, advertising agencies, public relations firms and other business and nonprofit organizations join in providing internship opportunities. Summer and semester-length study abroad opportunities are available.

MISSION

The School of Communication is dedicated to a global educational perspective and is committed to providing a socially responsible and ethically grounded learning environment guided by a diverse faculty of scholars, artists and professionals. The School is committed to quality undergraduate and graduate programs in communication that emphasize the relationship between theory and practice. We believe in freedom of expression and creativity, and encourage both collaboration and independent thinking as we prepare future scholars, professionals and leaders for a lifetime of service and learning.

ACCREDITATION

The University of Miami is accredited by the Southern Association of Colleges and Schools, 1866 Southern Lane, Decatur, GA 30033-4097.

ACADEMIC POLICIES

Admission to Major

A student entering the School of Communication as a freshman or as a transfer will enroll in Communication pre-major status. Candidates for the Bachelor of Science in Communication who have achieved sophomore standing and have satisfactorily completed the entrance requirements of one of the Communication majors (see Program Statements) will be admitted to major status in their chosen program at the School.

Internal Transfer into the School of Communication

A student enrolled at the University of Miami in a School or College other than the School of Communication may apply for admission into the School. Applications are accepted every fall and spring semester. A minimum overall grade point average of 2.5 is necessary for consideration. Applications are available in the Admissions, Academic & Alumni Services Office of the School of Communication (2037 Wolfson Building) and must be submitted prior to the end of classes in either the fall or spring semester. Admission decisions will be made promptly after semester grades are final. Students will be notified in writing of the School’s decision.

Transfer Students

A transfer student must complete in residence a minimum of 15 credits toward a Communication major or a minimum of 9 credits toward a Communication minor. Courses taken elsewhere in Communication or related disciplines are not automatically accepted.
toward a major or minor at the University of Miami. Students who have obtained the written approval of the Chair of a Communication major to use transfer credit to satisfy one or more requirements of that major may be required to complete additional courses in residence at the University before being admitted to that major. Students should consult a School of Communication advisor to determine whether the transfer of Communication courses will increase beyond 120 the total number of credits required for a degree. In general, transfer credit will not be accepted to satisfy requirements for any course in any major or minor at the 300-level or above. Student petitions to transfer credit will be considered on an individual basis.

Transfer credit may not be used to satisfy requirements for any major in Communication without the written approval of the Chair of the programs concerned.

**Academic Progress & Probation/Dismissal**

Students must maintain a quality point average (QPA) of 2.5 or higher in courses taken in residence and submitted for their School of Communication major. Following the first semester in which any student’s QPA in the major falls below a 2.5, the School may issue a warning to that student that his or her work does not meet School expectations. Should that student’s QPA in the major be below a 2.5 in any subsequent semester, he or she may be placed on Academic Probation. The School may dismiss from the University any student who is on probation a total of two semesters (not necessarily consecutive.) A student who has completed 45 University credits while enrolled in the School but who has not been admitted to one of the Communication majors may be dismissed from the School. A student who has completed 60 University credits while enrolled in the School but who has not been admitted to one of the Communication majors will be dismissed from the School. A student who has been dismissed from the School may apply for admission to one of the other Schools or Colleges within the University but will not be readmitted to the School of Communication. Those who wish to appeal their probation or dismissal must do so in writing to the Dean within 30 days of the notice of probation or dismissal. See also GOOD ACADEMIC STANDING, WARNING, PROBATION, AND DISMISSAL, in this Bulletin.

**Internship Credit**

All programs allow students to complete multiple internships. However, students will be permitted no more than three credits in School of Communication internship(s) toward their majors or toward their 120-credit University degree.

**Credit Hours and Advanced Placement Credit**

Credits may be earned through Advanced Placement, IB, CLEP Examinations, and Advanced Placement by Proficiency Examinations. These credits may be applied to the appropriate General Education Required Areas of Study or as electives except: (1) where prohibited by a specific program area; or (2) if the course is remedial (e.g., ENG 103, MTH 099). To earn credit, each student must pay a recording fee and have exempted course credits entered on his or her University transcript. An exemption may be granted for ENG 105 by the Department of English, but this exemption will not earn credit toward the 120 University credits required for graduation.

**Quality Point Average**

A candidate for the B.S. in Communication must complete the credit hours and achieve the quality point average specified for students in the University at large as stated in the section
titled ACADEMIC PROCEDURES AND INFORMATION, subject to additional requirements specified in School and Program sections of this Bulletin.

**General Education Required Areas of Study**

In applying these requirements to his or her course of study, each student must carefully read School of Communication program and major requirements that follow. In many cases, these requirements will be more restrictive and more specific in describing how each of these General Education Required Areas of Study is to be satisfied.

**DEGREE PROGRAMS**

The School of Communication offers courses in nine Programs of Study leading to the degree Bachelor of Science in Communication. The programs are Advertising, Public Relations, Communication Studies, Electronic Media, Broadcast Journalism, Journalism, Visual Journalism, Media Management, and Motion Pictures.

**MINORS**

The School of Communication offers minors in its nine Programs of Study and a general minor in Communication (COM). School of Communication students may complete a minor in a specific program of study but are not eligible for the general minor in Communication.

**CONCENTRATIONS**

Most degree programs offer concentrations or tracks of study in specialty areas. See the individual program sections for details on these concentrations.

**REQUIREMENTS FOR GRADUATION**

**BACHELOR of SCIENCE DEGREE in COMMUNICATION**

*Required University General Education Requirements*

**A. AREAS OF PROFICIENCY**

Proficiency requirements are intended to ensure that students either already possess, or will develop at the University, the ability to express themselves effectively, to use mathematics with facility, and to reason cogently. Superior scores on the SAT or ACT examinations may waive students from ENG 105 (requirement 1) and superior placement test scores administered by the Department of Mathematics may waive students from MTH 101 (requirement 2), but not from requirement 3, Writing Across the Curriculum.

1. **English Composition**  
   3-6 credits  
   Students fulfill this requirement by satisfactorily completing English 105 and English 106 or its equivalent. Appropriate Advanced Placement (AP) or International
Baccalaureate (IB) scores in English composition may be used to satisfy the English 105/106 requirement. An appropriate score on the SAT or ACT verbal examination may earn a student exemption from, but not credit in, ENG 105.

Appropriate scores on other tests determined by the Department of English may earn a student exemption from, but not credit in, English 105.

Courses satisfying the English Composition requirement may not be used to fulfill the Writing Across the Curriculum Required Area of Study.

2. Mathematics

Students fulfill this requirement by satisfactorily completing a course in mathematics numbered above MTH 101 (excluding MTH 107), or MAS 110, or an approved course in statistics. Exemption from the mathematics requirement or placement in prerequisite courses is based on any of the following tests: AP, IB, or an examination administered by the Department of Mathematics during orientation.

3. Writing Across the Curriculum (W)

Courses satisfying this requirement are those designated as involving a substantial amount of writing and the preparation of papers that are corrected for diction, syntax, style, and content. Some courses satisfying this Writing Across the Curriculum requirement will simultaneously fulfill a requirement under B. Areas of Knowledge (below).

B. Areas of Knowledge

These requirements are designed to help students understand and appreciate the intellectual achievements in major areas of human inquiry and creative endeavor. In satisfying these requirements students will explore the natural world, examine human development and behavior, and appreciate creative expression in the arts, literature, and philosophy.

No more than six credit hours may be taken in any one department to satisfy the areas of knowledge requirement. (Note: ART and ARH are considered the same department.) Most courses above the 100-level require prerequisites.

Natural World (6 credits) Courses in the following areas: Biology; Chemistry; Ecosystems Science and Policy; Geological Sciences; Marine Science; Physics; Physical Science; and the following courses: Anthropology 203; Geography 120; Kinesiology 155; Freshman Seminars in the Natural Sciences 190-199.

People and Society (6 credits) Courses in the following areas: Africana Studies; American Studies (AMS); Anthropology (except APY 203); Economics; Educational Psychology; Geography (except GEG 120); History; International Studies; Judaic Studies (JUS); Political Sciences; Psychology; Sociology; Teaching and Learning; Urban Studies; Women and Gender Studies; and the following courses: COM 101; COM 110; COS 112; COS 336; COS 472; Freshman Seminars in the Social Sciences.

Arts and Humanities (12 credits) Courses in the following areas: Architecture; Music; Art and Art History; Theatre Arts; English (200-level or above except ENG 208); Foreign Languages and Literatures (300-level or above); Philosophy; Religious Studies; and the following courses: COS 211; CMP 103; DAN (except 101 through 104); Freshman Seminars in the Arts and Humanities FFA 190-199. Students may
Major/Minor Requirements

In addition to completing a major in the School of Communication, students must also complete a minor (or a second major) in either a second Program of Study within the School or in an academic program outside of the School. Students completing majors and/or minors in the School must complete all School of Communication courses with grades of C or higher (a grade of C- or lower is not acceptable.) Students may not enroll in a School of Communication course without grades of C or higher in prerequisite courses. Students completing a minor or second major outside the School of Communication should consult this Bulletin for minimum grade requirements.

The Major in the School of Communication 36 to 45 credits

Majors in the School of Communication leading to a Bachelor of Science in Communication require between 36 and 45 credits in School of Communication courses specified in Program Statements (below). Courses within each major must be completed with a grade of C or higher (a grade of C- or lower is not acceptable.) In addition, students must maintain a quality point average of 2.5 or higher in courses taken in residence and submitted for their School of Communication majors.

The Minor 12 to 20 credits

Each Communication student, in addition to completing requirements for a Communication major (below), must complete a minor field in either a second Program of Study within the School or in an academic program outside the School. Each course submitted for a minor offered in the School of Communication must be completed with a grade of C or higher (a grade of C- or lower is not acceptable.) To find the requirements for a given minor, students should consult this Bulletin and confer with the appropriate department representative. School of Communication advisors will aid students in identifying appropriate minors. The candidate for a Communication degree may choose from among any of the disciplines offering minors at the University for which they may qualify. The choice of a minor should be made no later than the beginning of the junior year and must be approved by the discipline concerned. Each Communication student will be required by the time he or she has earned 60 credits to submit to his or her Communication advisor a statement of courses and other requirements for the chosen minor. This statement must be signed by the Department Chair or the Chair’s designated representative of the selected minor area.

The Second Major Option

Students may choose to complete a second major, either within the School or in an academic program outside the School, in place of the minor requirement. Some second majors are impractical within the minimum 120 credit degree program. Students should consult with a Communication advisor before selecting a second major. The choice of a second major should be made no later than the beginning of the junior year and must be approved by the discipline concerned. Each Communication student will be required, by the time he or she has earned 60 credits, to submit to his or her Communication advisor a statement of courses and other requirements for a second major. This statement must be
Double Counting

Unless Communication Program Statements otherwise restrict, a maximum of six credits from the major, the minor, or the second major may double count toward the General Education Required Areas of Study in the School of Communication (above); see Program Statements. A course listed under the Additional Requirements of a student’s major may also be used to satisfy a School General Education Required Areas of Study requirement.

Students completing a major and a minor in the School of Communication, or two majors within the School of Communication, may count only COM 101 and COM 250 toward both Programs of Study. No other course duplication is allowed. Students should consult with the Department Chair of the minor or second major for acceptable course substitutions where appropriate.

Additional Program Requirements

Most programs in the School require a student to complete specified courses in addition to the 12 to 15 courses that comprise the majors to obtain the School’s Bachelor of Science degree. These courses may, in some cases, fulfill requirements in the School’s General Education Required Areas of Study, or in a minor or second major outside the School, or may be general electives in the University.

The General Communication Minor

In addition to the School of Communication minors offered by individual Programs of Study, the School offers a General Communication minor for students in Schools or Colleges outside the School of Communication. Students majoring in the School of Communication may not use the General Communication Minor to complete their minor requirement.

- A student seeking a minor in the general area of Communication must complete 15 credits at least six of which must be at the 300-level or above.
- Courses taken for this minor must be approved in advance through the School’s office of Admissions, Academic & Alumni Services.
- Other minors are offered in Advertising; Public Relations; Communication Studies; Electronic Media; Broadcast Journalism; Journalism; Visual Journalism; Media Management; and Motion Pictures; see Program Statements.
- Each course submitted for a Communication minor must be completed with a grade of C or higher (a grade of C- or lower is not acceptable.)

Upper Division Credits

In earning a Bachelor of Science in Communication, each School of Communication student must complete a minimum of 36 credits of course work at the 300-level or above. Upper division courses taken in General Education Required Areas of Study, in the School of Communication major, in the second major or minor, and as general electives will count toward this 36-credit minimum requirement. Upper division transfer credits also apply if completed at a four-year institution and if approved by the Department Chair.
Electives

Only Free Elective courses may be taken under the University’s Credit Only option (see CREDIT ONLY OPTION in this Bulletin). Free Electives are defined as courses not taken to fulfill the requirements of the major within the School of Communication, of the second major or minor, or of the School’s General Education Required Areas of Study. Free Electives are courses taken not to meet any of the above requirements or their prerequisites, but taken solely to meet the requirement of a minimum total of 120 credits for the degree.

General Electives  Sufficient to fulfill a minimum of 120 credits

A sufficient number of University electives must be completed to fulfill a minimum total of 120 credits. Electives may be chosen from any courses offered by the University except certain unapproved courses such as Dance 101, 102, 103, 104, and activity courses offered by the School of Education. Students should consult a School of Communication advisor before selecting elective courses. Because specific courses are required in some School of Communication majors, students are advised to read Program Statements carefully and seek the advice of a School of Communication advisor prior to taking general University electives.

Schedules

Fifteen or sixteen credits constitute a normal semester schedule in the School of Communication. Students who wish to register for more than sixteen credits must obtain prior approval from the Academic Services Office. Students who are on academic probation will be limited to a maximum of thirteen credits.

HONORS

School of Communication students may graduate with School Honors in Communication noted upon their diplomas and transcripts. Students should contact the School’s Office of Admissions, Academic & Alumni Services (2037 Wolfson Building) for details about the School of Communication Honors Program.

Students may receive recognition as graduates cum laude, magna cum laude, or summa cum laude if they meet the requirements set forth under GRADUATION HONORS in this Bulletin.
UNDERGRADUATE ACADEMIC PROGRAMS

DEPARTMENT OF CINEMA AND INTERACTIVE MEDIA

The Department of Cinema and Interactive Media offers a major in Motion Pictures (CMP).

MOTION PICTURES - Dept. Code: CMP
http://com.miami.edu/programs

INTRODUCTION

The Motion Picture Program offers a complete curriculum for a new generation of media specialists, providing historical context and embracing the moving image creative process from writing and development, through production and post-production, to all forms of exhibition.

Visual storytelling requires technical skill, historical perspective and the ability to think critically in cinematic terms. The undergraduate Motion Pictures major provides the practical, collaborative and analytical skills required in today’s global and complex media environments.

The accomplished faculty is dedicated to engaging students in the discovery and development of their talents. Students are trained in innovation, creativity, critical thinking, adaptability, and the capacity to integrate theory and practice, technology and art. They are also well-equipped to understand the business and legal environments in which media industries operate.

Facilities in the Motion Picture Program include digital, 16mm and super-16 mm cameras; grip and electrical equipment; a soundstage; digital post-production image and sound facilities; and a digital animation lab. The School also operates the Bill Cosford Cinema, a state-of-the-art theater that exhibits first-run alternative, foreign and classic films. The Cosford Cinema provides an on-campus venue for various film festivals, including the annual Canes Film Festival featuring UM undergraduate and graduate work. A professional showcase screening of the best student work is held annually in Los Angeles.

The Motion Picture Program offers special summer programs in Prague (FAMU), Spain (Centro de Ciudad de la Luz), and Los Angeles (LA Experience).

EDUCATIONAL OBJECTIVES

The educational objectives of the Motion Picture Program are:

- Proficiency in the practice and process underlying the professional contemporary conception, development, production, completion, marketing and distribution of moving images.

- Proficiency in motion picture production techniques and the use of equipment necessary for entry into professional practice. Students concentrating in motion picture production will demonstrate the ability to create moving images meeting
entry-level, world-standard, professional expectations.

- Proficiency in story development, professional screenplay format and writing for media. Students concentrating in motion picture screenwriting will demonstrate writing ability at the level required for meeting entry-level professional expectations.

- Understanding of the business side of motion picture production, post-production, distribution and exhibition across a variety of platforms and global media contexts. Students concentrating in motion picture business will demonstrate an understanding of the principles and laws governing the profession, and the various ways of developing a moving image career.

- Understanding and appreciation of the history, aesthetic principles and classical and contemporary theories of moving image media. Students concentrating in motion picture critical studies will demonstrate comprehensive familiarity with major individual works, genres, national cinemas and movements, their diverse institutional, social and cultural contexts, and their significance within the global history of the moving image.

**DEGREE PROGRAMS**

The Bachelor of Science in Communication is offered in the Motion Pictures Program.

**MAJOR**

A major is offered in Motion Pictures.

Each candidate for the degree of Bachelor of Science in Communication will complete School of Communication requirements including courses in the School’s General Education Required Areas of Study. Motion Pictures majors must also complete a separate minor or a second major in either a second Program of Study within the School or in an academic program outside the School.

**Admission to the Motion Picture major**

Before admission as a Motion Picture (CMP) major, a student must:

A) Achieve sophomore standing;

B) Complete the five Core courses listed below, in residence at the University, all with grades of C or higher (C- is not acceptable.)

Students who have obtained the written approval of the Chair of Cinema and Interactive Media to use transfer credit to satisfy one or more requirements of that major may be required to complete additional courses in residence at the University before being admitted to that major.

Upon completion of a student’s first 45 University credits while enrolled in the School of
Communication, all University credits earned toward the major will be used in computing a student’s major cumulative quality point average; only those students with a cumulative average of 2.5 or higher will be admitted to a major.

A student who has completed 45 credits while enrolled in the School of Communication but who has not been admitted to one of the Communication majors may be dismissed from the School. A student who has completed 60 University credits while enrolled in the School but who has not been admitted to one of the Communication majors will be dismissed from the School. See PROBATION AND DISMISSAL.

THE MOTION PICTURES MAJOR

Students majoring in Motion Pictures are required to choose one of the following five areas of concentration: General, Production, Screenwriting, Business or Critical Studies.

GENERAL MOTION PICTURES CONCENTRATION

CORE COURSES

CMP 103 Survey of Motion Pictures
CMP 126 Introduction to Screenwriting
CMP 151 Introduction to Digital Production
CMP 204 History of International Cinema I
COM 250 Freedom of Expression and Communication Ethics

OTHER REQUIRED COURSES

CMP 205 History of International Cinema II
CMP 251 Motion Picture Workshop: Storytelling

Select one of the following:

CMP 351 Introduction to Film Production
CMP 326 Intermediate Screenwriting
CMP 364 Business of Motion Pictures

Select three courses (9 credits) of the following:

CMP 329 Writing for Series Television
CMP 353 Post Production Sound Editing and Design
CMP 356 Cinematography
CMP 357 Editing
CMP 359 Motion Graphics, Compositing and Animation
CMP 386 Online Screenwriting
CMP 395 Directing Techniques I
CMP 458 Documentary Production
CMP 462 Motion Picture Marketing and Distribution
CMP 465 Producing the Motion Picture
CMP 469 Legal Aspects of Motion Pictures
CMP 494 Motion Picture Internship
CMP 499 Projects and Directed Research
Select two courses (6 credits) of the following:

CMP 394 Special Topics in Motion Pictures
CMP 401 Nonfiction Film and Digital Media
CMP 403 Film Directors
CMP 404 Aspects of Contemporary Cinema
CMP 406 Genres
CMP 407 National Cinemas
CMP 408 Women, Media and Popular Culture

Two additional Motion Picture electives (6 credits) must be selected.

Electives outside the Motion Picture major (but within the School of Communication) must be approved by the Chair.

MOTION PICTURES PRODUCTION CONCENTRATION

CORE COURSES

CMP 103 Survey of Motion Pictures
CMP 126 Introduction to Screenwriting
CMP 151 Introduction to Digital Production
CMP 204 History of International Cinema I
COM 250 Freedom of Expression and Communication Ethics

OTHER REQUIRED COURSES

CMP 205 History of International Cinema II
CMP 251 Motion Picture Workshop: Storytelling
CMP 351 Introduction to Film Production

Select two courses (6 credits) of the following:

CMP 353 Post Production Sound Editing and Design
CMP 356 Cinematography
CMP 357 Editing
CMP 359 Motion Graphics, Compositing and Animation
CMP 364 Business of Motion Pictures
CMP 395 Directing Techniques I

Select two courses (6 credits) of the following:

CMP 451 Motion Picture Practicum
CMP 456 Advanced Cinematography
CMP 457 Advanced Editing
CMP 458 Documentary Production
CMP 459 Advanced Motion Graphics, Compositing and Animation
CMP 494 Motion Picture Internship
CMP 595 Directing Techniques II

Select one course (3 credits) of the following:

CMP 394 Special Topics in Motion Pictures
CMP 401 Nonfiction Film and Digital Media
CMP 403 Film Directors
CMP 404 Aspects of Contemporary Cinema
CMP 406 Genres
CMP 407 National Cinemas
CMP 408 Women, Media and Popular Culture

**Two additional Motion Picture electives (6 credits) must be selected.**

Electives outside the Motion Picture major (but within the School of Communication) must be approved by the Chair.

**MOTION PICTURES SCREENWRITING CONCENTRATION**

**CORE COURSES**

- CMP 103 Survey of Motion Pictures
- CMP 126 Introduction to Screenwriting
- CMP 151 Introduction to Digital Production
- CMP 204 History of International Cinema I
- COM 250 Freedom of Expression and Communication Ethics

**OTHER REQUIRED COURSES**

- CMP 205 History of International Cinema II
- CMP 251 Motion Picture Workshop: Storytelling
- CMP 326 Intermediate Screenwriting

**Select four courses (12 credit hours) of the following:**

- CMP 329 Writing for Series Television
- CMP 386 Online Screenwriting
- CMP 426 Advanced Screenwriting
- CMP 429 Advanced TV Writing
- CMP 489 Projects in Screenwriting

**Select one course (3 credits) of the following:**

- CMP 394 Special Topics in Motion Pictures
- CMP 401 Nonfiction Film and Digital Media
- CMP 403 Film Directors
- CMP 404 Aspects of Contemporary Cinema
- CMP 406 Genres
- CMP 407 National Cinemas
- CMP 408 Women, Media and Popular Culture

**Two additional Motion Picture electives (6 credits) must be selected.**

Electives outside the Motion Picture major (but within the School of Communication) must be approved by the Chair.

**MOTION PICTURES BUSINESS CONCENTRATION**

**CORE COURSES**

- CMP 103 Survey of Motion Pictures
CMP 126 Introduction to Screenwriting
CMP 151 Introduction to Digital Production
CMP 204 History of International Cinema I
COM 250 Freedom of Expression and Communication Ethics

OTHER REQUIRED COURSES

CMP 205 History of International Cinema II
CMP 251 Motion Picture Workshop: Storytelling
CMP 364 Business of Motion Pictures

Select four courses (12 credits) of the following:

CMP 351 Introduction to Film Production
CMP 462 Motion Picture Marketing and Distribution
CMP 465 Producing the Motion Picture
CMP 469 Legal Aspects of Motion Pictures
CMP 494 Motion Picture Internship
CMP 499 Projects and Directed Research

Select one course (3 credits) of the following:

CMP 394 Special Topics in Motion Pictures
CMP 401 Nonfiction Film and Digital Media
CMP 403 Film Directors
CMP 404 Aspects of Contemporary Cinema
CMP 406 Genres
CMP 407 National Cinemas
CMP 408 Women, Media and Popular Culture

Two additional Motion Picture electives (6 credits) must be selected.

Electives outside the Motion Picture major (but within the School of Communication) must be approved by the Chair.

MOTION PICTURES CRITICAL STUDIES CONCENTRATION

CORE COURSES

CMP 103 Survey of Motion Pictures
CMP 126 Introduction to Screenwriting
CMP 151 Introduction to Digital Production
CMP 204 History of International Cinema I
COM 250 Freedom of Expression and Communication Ethics

OTHER REQUIRED COURSES

CMP 205 History of International Cinema II
CMP 251 Motion Picture Workshop: Storytelling

Select five courses (15 credits) of the following:

CMP 394 Special Topics in Motion Pictures
CMP 401 Nonfiction Film and Digital Media
CMP 403 Film Directors
CMP 404 Aspects of Contemporary Cinema
CMP 406 Genres
CMP 407 National Cinemas
CMP 408 Women, Media and Popular Culture

Three additional Motion Picture electives (9 credits) must be selected.

Electives outside the Motion Picture major (but within the School of Communication) must be approved by the Chair.

MINOR

A Minor is offered in Motion Pictures.

The minor in Motion Pictures requires a grade of C or better in the following courses (a C- is not acceptable.)

REQUIRED COURSES

CMP 103 Survey of Motion Pictures

Four additional Motion Picture electives (12 credits) with the approval of the Chair must be selected. A minimum of 6 credits at the 300-level or above is required.

DEPARTMENT HONORS

School of Communication students may graduate with School Honors in Communication noted upon their diplomas and transcripts. Students should contact the School’s Office of Admissions, Academic & Alumni Services (2037 Wolfson Building) for details. Students may receive recognition as graduates cum laude, magna cum laude, or summa cum laude if they meet the requirements set forth under GRADUATION HONORS in this Bulletin.

Motion Pictures Course Listing
DEPARTMENT OF COMMUNICATION STUDIES

The Department of Communication Studies offers a major in Communication Studies (COS)

COMMUNICATION STUDIES - Dept. Code: COS
http://com.miami.edu/programs

INTRODUCTION

The major in Communication Studies empowers students to acquire advanced skills in many areas involving human interaction, cross-cultural and international communication, advocacy, argumentation, relationship building, leadership, presentation (oral and written), critical thinking, research and writing. Students become familiar with the rich tradition of communication theory and research, investigate emerging knowledge about communication, and contribute to the growth of new understanding by developing and applying their research capabilities. Students also are challenged to employ their communication understanding and skills in meaningful ways through experiential learning, professional and community involvement. Communication Studies blends a broad-based theoretical understanding of communication principles with specific and concrete application for particular contexts. Students are prepared for a variety of career options in health communication, business and the professions, politics and public advocacy, education, training and media, as well as further graduate and professional study in communication, law and other areas.

EDUCATIONAL OBJECTIVES

The educational objectives of the Communication Studies program require that:

- Students demonstrate a comprehensive understanding of the human communication process in a diverse society and application of communication skills through examinations, written and multimedia assignments, class discussions, group problem solving, presentations, speeches, debates, and service learning activities.

- Students demonstrate an understanding of communication contexts such as intrapersonal, interpersonal, intercultural, small group, organizational, political, and public communication.

- Students demonstrate skill development and application of communication processes including message design, message delivery, critical thinking, creative thinking, and argumentation.

- Students demonstrate the effects of communication and social interaction based on perceptions, construction of reality, relationship development, persuasion, and conflict resolution.

- Students demonstrate an understanding of generating knowledge relating to the human communication process and social interaction using appropriate methods such as qualitative analysis (observations, case studies, interviews, focus groups),
quantitative analysis (survey, experimental design, content analysis) or critical approaches (rhetorical criticism, discourse analysis, textual analysis).

**DEGREE PROGRAMS**

The Bachelor of Science in Communication degree is offered in Communication Studies.

**MAJOR**

A major is offered in Communication Studies.

Each candidate for the degree of Bachelor of Science in Communication will complete School of Communication requirements including courses in the School’s General Education Required Areas of Study. Communication Studies majors must also complete a separate minor or a second major in either a second Program of Study within the School or in an academic program outside the School.

**Admission to the Communication Studies major**

Before admission as a Communication Studies (COS) major, a student must:

A) Achieve sophomore standing;

B) Complete the four Core courses listed below, in residence at the University, all with grades of C or higher (C- is not acceptable.)

Students who have obtained the written approval of the Chair of Communication Studies to use transfer credit to satisfy one or more requirements of that major may be required to complete additional courses in residence at the University before being admitted to that major.

Upon completion of a student’s first 45 University credits while enrolled in the School of Communication, all University credits earned toward the major will be used in computing a student’s major cumulative grade point average; only those students with a cumulative average of 2.5 or higher will be admitted to a major.

A student who has completed 45 credits while enrolled in the School of Communication but who has not been admitted to one of the Communication majors may be dismissed from the School. A student who has completed 60 University credits while enrolled in the School but who has not been admitted to one of the Communication majors will be dismissed from the School. See PROBATION AND DISMISSAL.

**THE COMMUNICATION STUDIES MAJOR**

All majors are required to complete Core Courses (12 credits), Area of Concentration (15 credits), and Other Required Courses (9 credits). A minimum of 15 credits at the 300-level or above is required within the 36-credit major.
CORE COURSES

Students majoring in Communication Studies must complete the following courses (12 credits):

COM 110 Communication Theory
COM 250 Freedom of Expression and Communication Ethics
COS 112 Interpersonal Communication
COS 210 Writing for Communication Studies

AREAS OF CONCENTRATION

Students majoring in Communication Studies are required to choose one of the following areas of concentration (15 credits): General Communication Studies, Intercultural Communication, Organizational Communication, or Public Advocacy.

CONCENTRATION IN GENERAL COMMUNICATION STUDIES

15 elective credits in Communication Studies chosen with prior approval of a COS faculty advisor.

CONCENTRATION IN INTERCULTURAL COMMUNICATION

COS 316 Small Group Communication
COS 318 Nonverbal Communication
COS 343 Introduction to Intercultural Communication
COS 545 Intercultural Communication: International Perspectives
COS 546 Intercultural Communication: Domestic Perspectives

CONCENTRATION IN ORGANIZATIONAL COMMUNICATION

COS 316 Small Group Communication
COS 333 Business Communication
COS 343 Introduction to Intercultural Communication
COS 418 Organizational Communication
COS 498 Communication Studies Internship

CONCENTRATION IN PUBLIC ADVOCACY

COS 211 Public Speaking
COS 472 Persuasion
COS 560 The Executive Communicator

Select one of the following courses:

COS 304 Intercollegiate Debate Theory and Practice (complete 3 credits)
COS 377 Argumentation and Debate

Select one of the following courses:

COS 316 Small Group Communication
COS 318 Nonverbal Communication
COS 336 American Political Campaign Communication
OTHER REQUIRED COURSES

Students majoring in Communication Studies must complete the following courses (9 credits):

COS 351 Qualitative Research Methods
COS 353 Quantitative Communication Research Methods and Analyses
COS 479 Capstone for Communication Studies

MINOR

The minor in Communication Studies requires COM 110, plus twelve additional credits in Communication Studies, at least six of which must be at the 300-level or above. The additional credits must be chosen with prior approval of a Communication Studies faculty advisor. A grade of C or better is required in all courses (a C- is not acceptable.)

DEPARTMENT HONORS

School of Communication students may graduate with School Honors in Communication noted upon their diplomas and transcripts. Students should contact the School’s Office of Admissions, Academic & Alumni Services (2037 Wolfson Building) for details.

Students may receive recognition as graduates cum laude, magna cum laude, or summa cum laude if they meet the requirements set forth under GRADUATION HONORS in this Bulletin.
DEPARTMENT OF JOURNALISM AND MEDIA MANAGEMENT

The Department of Journalism and Media Management offers majors in Broadcast Journalism (CEM), Electronic Media (CEM), Media Management (CEM), Journalism (CNJ), and Visual Journalism (CVJ).

ELECTRONIC MEDIA, BROADCAST JOURNALISM AND MEDIA MANAGEMENT - Dept. Code: CEM
http://com.miami.edu/programs

INTRODUCTION

The electronic media have a profound impact on daily life and the future of local and global communities. The School of Communication Electronic Media Program is dedicated to nurturing the aspirations of men and women who seek to dedicate their professional lives to the arts, crafts and businesses of electronic mass communication and its allied fields.

Majors study all aspects of television, radio, cable, broadband, and web operations in preparation for careers as electronic media professionals. Three majors and three minors are offered in the Electronic Media Program. The program emphasizes hands-on learning within a multicultural, international context. Students consistently win first place awards in regional and national competitions.

All Electronic Media students are encouraged to become involved in UMTV (the campus cable television channel available to the community, the UM campus and over the web) and the student-run radio station, WVUM-FM, serving South Florida.

The School’s facilities include state-of-the-art, all-digital television and radio studios, digital post-production stations and related capabilities.

EDUCATIONAL OBJECTIVES

Learning objectives for each of the three majors in the Electronic Media program should foster critical thinking skills. Our majors develop the intellectual capacity to analyze, evaluate and adapt to an ever-changing media environment.

The educational objectives of the undergraduate Electronic Media major require that students:

- Demonstrate knowledge of the workings of the electronic mass media and be able to identify and describe the impact of historical events, economic factors, technology, audience analysis research, content choices, and regulation of the electronic media industry. This knowledge should be understood within the context of a global and culturally diverse communications environment.

- Demonstrate the ability to identify and operate traditional and computer-based audio and video equipment and accompanying software. Students concentrating in electronic media production will demonstrate the ability to produce video programs meeting entry-level professional expectations.
• Demonstrate writing ability at the level required for meeting entry-level professional expectations.

• Demonstrate the development of a professional identity through the ability to articulate and practice the values, ethics, social responsibility, and expectations of the profession. In particular, students should demonstrate an understanding of the principles and laws regarding freedom of expression within a democratic society.

• Demonstrate service to the campus and larger community through participation in the creation and delivery of content for campus and community audiences.

The educational objectives of the undergraduate Broadcast Journalism major require that students:

• Demonstrate the ability to acquire information and effectively present journalistic messages in an appropriate format using basic oral, written and visual communication skills.

• Demonstrate knowledge of the workings of the electronic mass media and be able to identify and describe the impact of historical events, economic factors, technology, audience analysis research, content choices, and regulation on the electronic media industry. This knowledge should be understood within the context of a global and culturally diverse communications environment.

• Demonstrate the development of a professional identity through the ability to articulate and practice the values, ethics, social responsibility, and expectations of the profession. In particular, students should demonstrate an understanding of the principles and laws regarding freedom of expression within a democratic society.

• Demonstrate service to the campus and larger community through participation in the creation and delivery of content for campus and community audiences.

The educational objectives of the undergraduate Media Management major require that students:

• Demonstrate knowledge of the workings of the electronic mass media and be able to identify and describe the impact of historical events, economic factors, technology, audience analysis research, content choices, and regulation of the electronic media industry. This knowledge should be understood within the context of a global and culturally diverse communications environment.

• Demonstrate writing ability at the level required for meeting entry-level professional expectations.

• Demonstrate analytical and critical skills needed to acquire, organize and synthesize information and data in a manner consistent with professional standards; the student will demonstrate the ability to define problems, evaluate decision options and select the best course of action.

• Demonstrate the development of a professional identity through the ability to articulate and practice the values, ethics, social responsibility, and expectations of the profession. In particular, students should demonstrate an understanding of the principles and laws regarding freedom of expression within a democratic society.
Demonstrate service to the campus community through collaboration with School and campus media outlets.

DEGREE PROGRAMS

The Bachelor of Science in Communication is offered in Electronic Media, Broadcast Journalism, and Media Management.

MAJOR

Majors are offered in Electronic Media, Broadcast Journalism and Media Management.

Each candidate for the degree of Bachelor of Science in Communication will complete School of Communication requirements including courses in the School’s General Education Required Areas of Study. Electronic Media, Broadcast Journalism and Media Management majors must also complete a separate minor or a second major in either a second Program of Study within the School or in an academic program outside the School.

Admission to the Electronic Media, Broadcast Journalism and Media Management majors

Before admission as an Electronic Media, Broadcast Journalism, or Media Management (CMM) major, a student must:

A) Achieve sophomore standing;

B) Complete the four Core courses listed below, in residence at the University, all with grades of C or higher (C- is not acceptable.)

Students who have obtained the written approval of the Chair of Journalism and Media Management to use transfer credit to satisfy one or more requirements of that major may be required to complete additional courses in residence at the University before being admitted to that major.

Upon completion of a student’s first 45 University credits while enrolled in the School of Communication, all University credits earned toward the major will be used in computing a student’s major cumulative quality point average; only those students with a cumulative average of 2.5 or higher will be admitted to a major.

A student who has completed 45 credits while enrolled in the School of Communication but who has not been admitted to one of the Communication majors may be dismissed from the School. A student who has completed 60 University credits while enrolled in the School but who has not been admitted to one of the Communication majors will be dismissed from the School. See PROBATION AND DISMISSAL.
THE ELECTRONIC MEDIA MAJOR

CORE COURSES

COM 101  Mass Media Communication in Society
CEM 102  Introduction to Electronic Media
CEM 201  Writing for the Electronic Media
COM 250  Freedom of Expression and Communication Ethics

OTHER REQUIRED COURSES

CEM 301  Electronic Media Research and Theories

Three credits at the 100-level or above.

Six credits at the 200-level or above.

Twelve credits at the 300-level or above.

Six credits at the 400-level or above. Only three of the six credits may be used for Internships or Projects and Directed Research.

All courses selected for the Electronic Media major must be approved by an Electronic Media faculty advisor.

ADDITIONAL REQUIREMENTS FOR THE ELECTRONIC MEDIA MAJOR

Students majoring in Electronic Media must also complete COS 211 or COS 333.

Sample Track #1: 12 Credit Core plus:

CVJ 106 Multimedia Design
CEM 245 Introduction to Electronic Media Production
CEM 301 Electronic Media Research and Theories
CEM 313 Electronic Media Sales
CEM 314 Broadcast and Cable Programming
CEM 345 Intermediate Electronic Media Production
CEM 408 International Electronic Media Systems
CEM 435 Telecommunication Systems
CEM 445 Advanced Electronic Media Production
CEM 491 Internship in Broadcasting and Allied Fields

Sample Track #2: 12 Credit Core plus:

CVJ 106 Multimedia Design
CEM 245 Introduction to Electronic Media Production
CEM 301 Electronic Media Research and Theories
CEM 302 Electronic Media Law
CEM 306 Special Topics in Electronic Media II
CEM 314 Broadcast and Cable Programming
CEM 345 Intermediate Electronic Media Production
CMP 357 Editing
CEM 445 Advanced Electronic Media Production
CEM 491 Internship in Broadcasting and Allied Fields

MINOR

The minor in Electronic Media requires:

CEM 102 - Introduction to Electronic Media, and twelve additional credits chosen with the prior approval of an Electronic Media faculty advisor. At least six of those credits must be at the 300-level or above. A grade of C or better is required in all courses (a C- is not acceptable.)

THE BROADCAST JOURNALISM MAJOR

CORE COURSES

COM 101 Mass Media Communication in Society
CEM 102 Introduction to Electronic Media
CNJ 111 Introduction to News Media Writing
COM 250 Freedom of Expression and Communication Ethics

OTHER REQUIRED COURSES

CNJ 216 News Reporting and Writing
CEM 245 Introduction to Electronic Media Production
CEM 301 Electronic Media Research and Theories
CEM 302 Electronic Media Law
CEM 317 Broadcast Journalism
CEM 345 Intermediate Electronic Media Production
CEM 517 Television News Reporting

Nine additional credits, at least three of which must be at the 300-level or above, in School of Communication courses, chosen with the prior approval of a Broadcast Journalism faculty advisor.

ADDITIONAL REQUIREMENTS FOR THE BROADCAST JOURNALISM MAJOR

Students majoring in Broadcast Journalism are required to complete the following: COS 211 or COS 333; POL 201; and six additional credits in Political Science, History, or Economics.

MINOR

The minor in Broadcast Journalism requires:

CEM 102 Introduction to Electronic Media
CNJ 111 Introduction to News Media Writing
CNJ 216 News Reporting and Writing
CEM 245 Introduction to Electronic Media Production
CEM 317 Broadcast Journalism
Three additional credits at the 300-level or higher, chosen with the prior approval of a Broadcast Journalism faculty advisor. A grade of C or better is required in all courses (a C- is not acceptable.)

THE MEDIA MANAGEMENT MAJOR

CORE COURSES

COM 101 Mass Media Communication in Society
CEM 102 Introduction to Electronic Media
COM 250 Freedom of Expression and Communication Ethics

Select one of the following courses:

ENG 230 Business Writing
CEM 201 Writing for the Electronic Media
CPR 232 Promotional Writing

OTHER REQUIRED COURSES

CEM 301 Electronic Media Research and Theories
CEM 314 Broadcast and Cable Programming
CEM 435 Telecommunication Systems
CEM 403 Media Economics
CEM 402 Strategic Media Management

Select one of the following courses:

CEM 302 Electronic Media Law
CNJ 303 Mass Media Law
CMP 469 Legal Aspects of Motion Pictures

Twelve additional credits in School of Communication courses chosen with the prior approval of a Media Management faculty advisor. At least three of the twelve credits must be at the 300-level or above.

ADDITIONAL REQUIREMENTS FOR THE MEDIA MANAGEMENT MAJOR

Media Management students must complete ECO 211 or ECO 212. These courses may be used for the School’s People and Society requirement.

Media Management students must complete MKT 301 plus six additional credits in the School of Business Administration chosen with the prior approval of a School of Communication advisor. Three of these six credits must be at the 300-level or above. Students majoring in Media Management must also complete COS 333 or COS 418.

Students seeking a Marketing Minor from the School of Business Administration must complete MKT 301 with a grade of B or higher, plus three of the following: MKT 310, MKT 320, MKT 340, and MKT 360. Students must earn a cumulative quality point average of 2.5 or higher in the four courses submitted for the minor. Consult the School of Business Administration section of this Bulletin.
Students seeking a General Business Minor from the School of Business Administration must complete MKT 301, ACC 211, FIN 300 and MGT 304 with a cumulative quality point average of 2.0 or higher. Consult the School of Business Administration section of this Bulletin.

MINOR

The minor in Media Management requires:

CEM 102 Introduction to Electronic Media
CEM 301 Electronic Media Research and Theories
CEM 314 Broadcast and Cable Programming

Six additional credits chosen with the prior approval of a Media Management faculty advisor, at least three of which must be at the 300-level or higher.

A grade of C or better is required in all courses (a C- is not acceptable.)

DEPARTMENT HONORS

School of Communication students may graduate with School Honors in Communication noted upon their diplomas and transcripts. Students should contact the School’s Office of Admissions, Academic & Alumni Services (2037 Wolfson Building) for details.

Students may receive recognition as graduates cum laude, magna cum laude, or summa cum laude if they meet the requirements set forth under GRADUATION HONORS in this Bulletin.

Electronic Media Course Listing
JOURNALISM - Dept. Code: CNJ
http://com.miami.edu/programs

INTRODUCTION

The program in Journalism prepares students to be writers, editors and designers for a variety of media from mainstream and alternative newspapers and magazines to web-based and online media, emphasizing effective storytelling through writing, audio and video recording, and photography. Reporting skills and writing in the context of news, commentary and features are stressed in this area of study. The program enables students to gather information, evaluate and organize that information, and then communicate it through appropriate media. As a result, the program attracts students interested in other fields in which research, analysis and writing are important, such as students planning to apply to law school or other professional or graduate schools.

The program begins with courses that survey the roles of and issues affecting the mass media in general and journalism in particular. In subsequent courses, students mix skills and theory to explore journalism, its values, history, ethics, and legal and regulatory constraints. Journalism majors learn through hands-on practice to conduct research and reporting, to verify facts, exercise news judgment, write against deadlines, edit, practice ethical decision-making, and adhere to press laws and regulations.

Small laboratory classes allow students to practice writing skills in an introductory news writing course, an advanced reporting course and upper-level courses in advanced reporting. Electives include courses in newspaper, magazine, newsletter and online writing and graphics; still photography; audio, video and web production; newspaper, magazine and web editing and design; computer-assisted reporting and the Internet; and global journalism and media. Journalism seniors participate in a news ethics and professional problems seminar to prepare them for on-the-job decision-making. While knowledge of a foreign language may be helpful, the program does not require any foreign language courses.

Students are encouraged to work for The Miami Hurricane, UM's award-winning, student-run newspaper published twice weekly in print and online; Distraction magazine; Ibis, UM's yearbook; Communiqué, the School of Communication's online newspaper; and hyper-local news sites such as Gables Home Page.

Students choose from a range of newspapers, magazines, newsletters and websites published in the Greater Miami-Fort Lauderdale area for internships and part-time employment. Students have been awarded competitive internships from The Washington Post, the Los Angeles Times, Tribune Newspapers, McClatchy Newspapers and the Poynter Institute, among others.

EDUCATIONAL OBJECTIVES

The educational objectives of the Journalism Program require that:

- Students can locate and gather information, using interpersonal interviewing skills, knowledge about domestic and global information sources and social and institutional
information processes, sophisticated reporting techniques, computer skills, and general knowledge and common sense.

- Using knowledge from broad-based liberal arts and science courses and courses in journalism practice, history, law and ethics, students can critically analyze complex information and organize it based on sound reasoning, cultural awareness, and journalistic principles.

- Students can write, visualize and otherwise accurately communicate, with knowledge of grammar, style, and journalistic principles, complex information to diverse mass audiences.

- Students can convey information in traditional and multimedia formats in the context of a dynamic and converging news media environment.

DEGREE PROGRAMS

The Bachelor of Science in Communication degree is offered in the Journalism Program.

MAJOR

A major is offered in Journalism.

Each candidate for the degree of Bachelor of Science in Communication will complete School of Communication requirements including courses in the School’s General Education Required Areas of Study. Journalism majors must also complete a separate minor or a second major in either a second Program of Study within the School or in an academic program outside the School.

Admission to the Journalism major

Before admission as a Journalism (CNJ) major, a student must:

A) Achieve sophomore standing;

B) Complete the four Core courses listed below, in residence at the University, all with grades of C or higher (C- is not acceptable.)

Students who have obtained the written approval of the Chair of Journalism and Media Management to use transfer credit to satisfy one or more requirements of that major may be required to complete additional courses in residence at the University before being admitted to that major.

Upon completion of a student’s first 45 University credits while enrolled in the School of Communication, all University credits earned toward the major will be used in computing a student’s major cumulative quality point average; only those students with a cumulative average of 2.5 or higher will be admitted to a major.

A student who has completed 45 credits while enrolled in the School of Communication but who has not been admitted to one of the Communication majors may be dismissed from the School. A student who has completed 60 University credits while enrolled in the School but
who has not been admitted to one of the Communication majors will be dismissed from the School. See PROBATION AND DISMISSAL.

THE JOURNALISM MAJOR

CORE COURSES

CNJ 111 Introduction to News Media Writing
CVJ 106 Multimedia Design
COM 250 Freedom of Expression and Communication Ethics
CNJ 319 History of Journalism

OTHER REQUIRED COURSES

CNJ 216 News Reporting and Writing
CNJ 303 Mass Media Law
CNJ 444 Public Affairs Reporting
CNJ 461 Seminar in News Ethics and Problems

Beyond the required courses, journalism majors must take at least 18 additional elective credits in journalism (for a total of 42 credits required to graduate with this major.) Some of these credits may be taken in other programs in the School of Communication after prior consultation with and approval by a Journalism faculty advisor. Up to 3 credits of the additional 18 elective credits may consist of internships or practicums.

As a guideline to assist students in pursuing their areas of interest, students may select one of the following tracks of specialization, though students have the option, after consultation with a Journalism faculty advisor, of tailoring their own particular course of study in journalism to suit their interests.

A. The NEWS Track

CVJ 221 Introduction to Documentary Photography
CNJ 444 Public Affairs Reporting
CNJ 445 In-Depth Journalism and Media Convergence

Select at least one of the following courses:

CNJ 513 Computer-Assisted Reporting
CNJ 515 Reporting and the Internet

Select at least one of the following courses:

CNJ 381 Newspaper Editing and Layout
CNJ 442 Online Journalism

B. The MAGAZINE/FEATURES Track

CVJ 221 Introduction to Documentary Photography
CNJ 382 Publication Planning and Editing
Select at least one of the following courses:

CNJ 513 Computer-Assisted Reporting
CNJ 515 Reporting and the Internet
CNJ 442 Online Journalism

Select at least one of the following courses:

CNJ 544 Feature Writing
CNJ 446 Travel Writing

Any additional elective credits from the School of Communication should be chosen with the prior approval of a Journalism faculty advisor.

C. The GLOBAL JOURNALISM Track

CNJ 510 Comparative Media Systems
CNJ 511 Global Media
CNJ 517 International Journalism

Students are encouraged to consider a minor or a second major in Latin American Studies, International Studies, or Comparative Politics. Other disciplines that include a significant international or cross-cultural focus can be discussed with a Journalism faculty advisor.

D. The PUBLICATION DESIGN Track

CVJ 221 Introduction to Documentary Photography
CVJ 341 Web Design

Select at least one of the following courses:

CNJ 381 Newspaper Editing and Layout
CNJ 382 Publication Planning and Editing

E. The DIGITAL NEWS Track

CVJ 106 Multimedia Design
CNJ 442 Online Journalism
CNJ 515 Reporting and the Internet

Select at least one of the following courses:

CEM 435 Telecommunication Systems
CNJ 513 Computer-Assisted Reporting

Select at least one of the following courses:

CVJ 209 Introduction to Multimedia Storytelling
CVJ 221 Introduction to Documentary Photography
CVJ 341 Web Design
CVJ 419 Interactive Storytelling
CVJ 422 Programming for Interactivity
F. The CUSTOM Track

Many students prefer to explore a number of different areas of specialization and build what amounts to a custom track. These students are required to consult with the Journalism Chair or her designated representative to design a custom track.

ADDITIONAL REQUIREMENTS FOR THE JOURNALISM MAJOR

Students majoring in Journalism must complete three credits in History, three credits in Political Science, and COS 211. These credits may be used to fulfill the School's General Education Required Areas of Study (see listing above). Any waivers of these requirements must be approved in writing by both the Chair and the Academic Services Office of the School of Communication.

MINOR

The 15 credit minor in Journalism requires:

CNJ 111
CNJ 216
CNJ 303
CNJ 381 or CNJ 382

One of the following courses is also required: CVJ 106, CNJ 319, CNJ 442, CNJ 444, CNJ 461 or CNJ 544.

A grade of C or better is required in all courses (a C- is not acceptable.)

Any waiver of these requirements must be approved in writing by both the Chair and the Academic Services Office of the School of Communication.

DEPARTMENT HONORS

School of Communication students may graduate with School Honors in Communication noted upon their diplomas and transcripts. Students should contact the School's Office of Admissions, Academic & Alumni Services (2037 Wolfson Building) for details.

Students may receive recognition as graduates cum laude, magna cum laude, or summa cum laude if they meet the requirements set forth under GRADUATION HONORS in this Bulletin.

Journalism Course Listing
INTRODUCTION

The Visual Journalism Program emphasizes visual storytelling that addresses meaningful content within the global community. It teaches technical literacy in traditional and cutting-edge technologies. Each course builds upon an understanding of the visual storytelling process, and each course stresses the theoretical underpinnings and ethical foundations of the journalistic tradition.

Our internationally recognized faculty is a blend of award-winning professionals and distinguished researchers and includes two Knight Chairs specializing in Visual Journalism and Cross-Cultural Journalism. Alumni of the program include award-winning journalists working with major news organizations.

EDUCATIONAL OBJECTIVES

The educational objectives of the Visual Journalism Program require that students:

• Demonstrate knowledge of the workings of the diverse global communication marketplace and be able to identify the impact of historical, technological, ethical and sociological influences in the communication evolution.

• Demonstrate the ability to gather and chronicle community-based information using research, interpersonal interviewing skills and media technology tools.

• Demonstrate the development of a professional identity through the ability to articulate and practice the values, ethics, social responsibility and expectations of the profession.

• Demonstrate the ability to critically analyze one’s own creative work as well as the work of fellow students and professionals in terms of content and aesthetics.

• Demonstrate service to the campus and community at large through participation in the creation and delivery of content for the campus and community audiences.

• Demonstrate technical proficiency in visual storytelling using both traditional and cutting-edge technology.

DEGREE PROGRAMS

The Bachelor of Science in Communication is offered in the Visual Journalism Program.

MAJOR

A Major is offered in Visual Journalism.
Each candidate for the degree of Bachelor of Science in Communication will complete School of Communication requirements including courses in the School’s General Education Required Areas of Study. Visual Journalism majors must also complete a second major or a separate minor in either a second Program of Study within the School or in an academic program outside the School.

Admission to the Visual Journalism major

Before admission as a Visual Journalism (CVJ) major, a student must:

A) Achieve sophomore standing;

B) Complete the five Core courses listed below, in residence at the University, all with grades of C or higher (C- is not acceptable.)

Students who have obtained the written approval of the Chair of Journalism and Media Management to use transfer credit to satisfy one or more requirements of that major may be required to complete additional courses in residence at the University before being admitted to that major.

Upon completion of a student's first 45 University credits while enrolled in the School of Communication, all University credits earned toward the major will be used in computing a student's major cumulative quality point average; only those students with a cumulative average of 2.5 or higher will be admitted to a major.

A student who has completed 45 credits while enrolled in the School of Communication but who has not been admitted to one of the Communication majors may be dismissed from the School. A student who has completed 60 University credits while enrolled in the School but who has not been admitted to one of the Communication majors will be dismissed from the School. See PROBATION AND DISMISSAL.

THE VISUAL JOURNALISM MAJOR

Core Courses

COM 250 Freedom of Expression and Communication Ethics
CNJ 111 Introduction to News Media Writing
CVJ 106 Multimedia Design
CVJ 221 Introduction to Documentary Photography
CVJ 341 Web Design

Select one of the following courses:

CVJ 209 Introduction to Multimedia Storytelling
CMP 151 Introduction to Digital Production
CEM 245 Introduction to Electronic Media Production

Select one of the following courses:

CNJ 216 News Reporting and Writing
CNJ 595 Special Topics: Social Media for Journalists
CVJ 496 Internship in Visual Journalism
MULTIMEDIA PROGRAMMING TRACK

CVJ 331 Information Graphics and Visualization
CVJ 422 Programming for Interactivity
SoC elective (200-level or above)
SoC elective (200-level or above)
CVJ elective (300-level or above)
CVJ 419 Interactive Storytelling (Capstone)

PHOTOJOURNALISM TRACK

CVJ 361 Advanced Documentary Photography
CVJ 435 Video Journalism
SoC elective (200-level or above)
SoC elective (200-level or above)
CVJ elective (300-level or above)
CVJ 419 Interactive Storytelling (Capstone)

MINOR

VISUAL JOURNALISM MINOR: CVJ 106, CVJ 209, CVJ 221, CVJ 341, and one 300-level or higher course from one of the two tracks of specialization in Visual Journalism. A grade of C or better in all courses is required (a C- is not acceptable.)

DEPARTMENT HONORS

School of Communication students may graduate with School Honors in Communication noted upon their diplomas and transcripts. Students should contact the School's Office of Admissions, Academic & Alumni Services (2037 Wolfson Building) for details.

Students may receive recognition as graduates cum laude, magna cum laude, or summa cum laude if they meet the requirements set forth under GRADUATION HONORS in this Bulletin.

Visual Journalism Course Listing
DEPARTMENT OF STRATEGIC COMMUNICATION

The Department of Strategic Communication offers a major in Advertising (CAD) and a major in Public Relations (CPR).

ADVERTISING - Dept. Code: CAD
http://com.miami.edu/programs

INTRODUCTION

Students majoring in Advertising learn the art, craft and business of how to promote brands from an integrated marketing perspective. The program gives students a well-rounded education in advertising that emphasizes strategy building, data gathering and analysis, creative development, and media planning skills. Both a major and a minor are offered in Advertising.

The program includes practical and theoretical approaches to the world of professional advertising, both domestically and internationally.

The curriculum is hands-on and students learn how to create an advertising campaign that meets their client's goals.

Qualified students may elect to participate in the internship program, which provides an opportunity to work in the professional community of the Greater Miami area or other regions. The School's Advertising Program also has an active alliance with the American Advertising Federation.

EDUCATIONAL OBJECTIVES

The educational objectives of the undergraduate Advertising program require that

• Students demonstrate an understanding of the history of advertising as it relates to the emergence of mass media outlets and the importance of advertising in the marketplace.

• Students apply theoretical concepts related to advertising, mass communication, consumer behavior, psychology, sociology, marketing, and other related fields to understand how advertising works in a free-market economy.

• Students analyze primary and secondary research data to create advertising strategies for a variety of products and services.

• Students demonstrate the ability to create strategic advertisements for print, broadcast, online and other media, as well as how to integrate a campaign idea across several media categories in a culturally diverse marketplace.

• Students research, create, design, write, and present an advertising campaign of their own creation and compete for an account as they would at an advertising agency.
• Students understand how advertising works in a global economy, taking into account cultural, societal, political, and economic differences that exist across countries and cultures.

• Students demonstrate an understanding and appreciation of the core ethical principles of the advertising profession.

DEGREE PROGRAMS

The Bachelor of Science in Communication is offered in the Advertising Program.

MAJOR

A major is offered in Advertising.

Each candidate for the degree of Bachelor of Science in Communication will complete School of Communication requirements including courses in the School’s General Education Required Areas of Study. Advertising majors must also complete a separate minor or a second major in either a second Program of Study within the School or in an academic program outside the School.

Admission to the Advertising major

Before admission as an Advertising (CAD) major, a student must:

A) Achieve sophomore standing;

B) Complete the five Core courses listed below, in residence at the University, all with grades of C or higher (C- is not acceptable).

Students who have obtained the written approval of the Chair of Strategic Communication to use transfer credit to satisfy one or more requirements of that major may be required to complete additional courses in residence at the University before being admitted to that major.

Upon completion of a student’s first 45 University credits while enrolled in the School of Communication, all University credits earned toward the major will be used in computing a student’s major cumulative quality point average; only those students with a cumulative average of 2.5 or higher will be admitted to a major.

A student who has completed 45 credits while enrolled in the School of Communication but who has not been admitted to one of the Communication majors may be dismissed from the School. A student who has completed 60 University credits while enrolled in the School but who has not been admitted to one of the Communication majors will be dismissed from the School. See PROBATION AND DISMISSAL.

THE ADVERTISING MAJOR

Students majoring in advertising will choose one of the following three tracks: General Advertising Track, Advertising Management Track, or Advertising Creative Track.
THE GENERAL ADVERTISING TRACK

**CORE COURSES**

- COM 101 Mass Media Communication in Society
- CAD 102 Graphic Design for Advertising I
- CAD 114 Principles of Advertising
- CAD 201 Advertising Strategy Development
- COM 250 Freedom of Expression and Communication Ethics

**OTHER REQUIRED COURSES**

Students must complete both of the following writing courses:

- CAD 231 Advertising Copywriting and Concept
- CAD 233 Writing for Account Management

Students must also complete:

- CAD 312 Research Methods for Advertising
- CAD 388 Media Planning
- CAD 434 Advertising Campaigns

Five additional advertising electives (15 credits) must be selected. Electives outside the advertising major (but within the School of Communication) must be approved by the Chair of Strategic Communication.

THE ADVERTISING MANAGEMENT TRACK

**CORE COURSES**

- COM 101 Mass Media Communication in Society
- CAD 102 Graphic Design for Advertising I
- CAD 114 Principles of Advertising
- CAD 201 Advertising Strategy Development
- COM 250 Freedom of Expression and Communication Ethics

**OTHER REQUIRED COURSES**

- CAD 233 Writing for Account Management
- CAD 312 Research Methods for Advertising
- CAD 388 Media Planning
- CAD 434 Advertising Campaigns
- CAD 491 The Business of Account Management
- CAD 495 Advertising Management

Four additional advertising electives (12 credits) must be selected. Electives outside the advertising major (but within the School of Communication) must be approved by the Chair of Strategic Communication.
THE ADVERTISING CREATIVE TRACK

CORE COURSES

- COM 101 Mass Media Communication in Society
- CAD 102 Graphic Design for Advertising I
- CAD 114 Principles of Advertising
- CAD 201 Advertising Strategy Development
- COM 250 Freedom of Expression and Communication Ethics

OTHER REQUIRED COURSES

- CAD 202 Graphic Design for Advertising II
- CAD 231 Advertising Copywriting and Concept
- CAD 384 Advertising Creative Strategy and Execution
- CAD 390 Art Direction
- CAD 434 Advertising Campaigns
- CAD 496 Portfolio Development

Four additional advertising electives (12 credits) must be selected. Electives outside the Advertising major (but within the School of Communication) must be approved by the Chair of Strategic Communication.

ADDITIONAL REQUIREMENTS FOR THE ADVERTISING MAJOR: ALL TRACKS

Students must complete ECO 211 and POL 201. These credits may be used for the School’s General Education Required Areas of Study.

Students must complete at least one course with an international or intercultural focus. Courses that meet this requirement include: CAD 350, MKT 360, CPR 582, COS 343, and COS 545. Other courses may be used to fulfill this requirement with the approval of an Advertising faculty advisor.

Students must complete COS 211, MKT 301, and MKT 310.

MINOR

The Advertising Program offers minors in Advertising Business and Advertising Creative.

Both 18-credit minors in Advertising require a grade of C or better in all courses (a C- is not acceptable.)

Required courses for the Advertising Business minor:

- CAD 114 Principles of Advertising
- CAD 201 Advertising Strategy Development
- CAD 233 Writing for Account Management
- CAD 312 Research Methods for Advertising
- CAD 388 Media Planning
- CAD 434 Advertising Campaigns
Required courses for the Advertising Creative minor:

CAD 102 Graphic Design for Advertising I  
CAD 114 Principles of Advertising  
CAD 202 Graphic Design for Advertising II  
CAD 231 Advertising Copywriting and Concept  
CAD 384 Advertising Creative Strategy and Execution  
CAD 434 Advertising Campaigns

Students seeking a Marketing minor from the School of Business Administration must complete MKT 301 with a grade of B or higher, MKT 310, plus two additional courses in marketing (except for MKT 386). Students must earn a cumulative quality point average of 2.5 or higher in the four courses submitted for the minor. Consult the School of Business Administration section of this Bulletin.

Students seeking a General Business minor from the School of Business Administration must complete MKT 301, ACC 211, FIN 300 and MGT 304 with a cumulative quality point average of 2.0 or higher. Consult the School of Business Administration section of this Bulletin.

DEPARTMENT HONORS

School of Communication students may graduate with School Honors in Communication noted upon their diplomas and transcripts. Students should contact the School’s Office of Admissions, Academic & Alumni Services (2037 Wolfson Building) for details.

Students may receive recognition as graduates cum laude, magna cum laude, or summa cum laude if they meet the requirements set forth under GRADUATION HONORS in this Bulletin.

Advertising Course Listing
INTRODUCTION

Students majoring in Public Relations learn how to promote a client’s business, image, product or service. Public relations is a strategic communication process that builds mutually beneficial relationships between organizations (business, government, nonprofit, individual) and their publics. PR practitioners develop and deliver key messages through traditional and social media channels. The program provides a well-rounded education in public relations that emphasizes research and analysis, creative development and the relationship of all media to PR in both public and private sectors.

The hands-on curriculum reflects the importance of strategic critical thinking, researching and understanding target audiences, and writing and design expertise and creativity. Students create and execute a PR campaign in a senior-level capstone course that serves a client organization in the community.

Demand for PR interns is high, and qualified students may elect to participate in the internship program to acquire professional experience in South Florida and other regions. The Public Relations Program has ties to the Public Relations Society of America and maintains a PRSA-affiliated chapter of the Public Relations Student Society of America.

EDUCATIONAL OBJECTIVES

The educational objectives of the program in Public Relations require that:

- Students demonstrate they understand and can apply the principles and laws of ethics and freedom of speech and the press, and understand how public relations research, theory, and tactics are used in organizations, roles and situations.
- Students produce effective, audience-sensitive communications in forms appropriate for intended audiences that demonstrate an understanding of the diversity of groups in a global society for public relations purposes.
- Students demonstrate an ability to think critically, creatively, and independently and express that through effectively written and spoken communications that are grammatically and stylistically correct.
- Students create, design, present and evaluate strategically planned campaigns that meet public relations objectives.
- Students gain a broad understanding of public relations practices through an understanding of the history and role of professionals and institutions in shaping communications.

DEGREE PROGRAMS

The Bachelor of Science in Communication degree is offered in the Public Relations Program.
MAJOR

A major is offered in Public Relations.

Each candidate for the degree of Bachelor of Science in Communication will complete School of Communication requirements including courses in the School’s General Education Required Areas of Study. Public Relations majors must also complete a separate minor or a second major in either a second Program of Study within the School or in an academic program outside the School.

 Admission to the Public Relations major

Before admission as a Public Relations (CPR) major, a student must:

A) Achieve sophomore standing;

B) Complete the five Core courses listed below, in residence at the University, all with grades of C or higher (C- is not acceptable.)

Students who have obtained the written approval of the Chair of Strategic Communication to use transfer credit to satisfy one or more requirements of that major may be required to complete additional courses in residence at the University before being admitted to that major.

Upon completion of a student’s first 45 University credits while enrolled in the School of Communication, all University credits earned toward the major will be used in computing a student’s major cumulative quality point average; only those students with a cumulative average of 2.5 or higher will be admitted to a major.

A student who has completed 45 credits while enrolled in the School of Communication but who has not been admitted to one of the Communication majors may be dismissed from the School. A student who has completed 60 University credits while enrolled in the School but who has not been admitted to one of the Communication majors will be dismissed from the School. See PROBATION AND DISMISSAL.

THE PUBLIC RELATIONS MAJOR

CORE COURSES

COM 101 Mass Media Communication in Society
CPR 116 Principles of Public Relations
CPR 202 Design Principles and Techniques
CPR 232 Writing for Public Relations
COM 250 Freedom of Expression and Communication Ethics

OTHER REQUIRED COURSES

CPR 311 Public Relations Research
CPR 346 Advanced Public Relations Writing and Design
CPR 436 Public Relations Campaigns

Five additional courses (15 credits) in a concentration at the 300-level or higher must be selected, with the prior approval of a Public Relations faculty advisor. Courses chosen should
lead to professional orientation and practice. Examples of such concentrations include corporate communication, sports promotion, health communication, public affairs, international public relations, and travel and tourism.

**ADDITIONAL REQUIREMENTS FOR THE PUBLIC RELATIONS COMMUNICATION MAJOR**

Students must complete POL 201 and ECO 211. These credits may be used for the School’s General Education Required Areas of Study (People and Society).

Students must complete COS 211, which can be used toward the School’s General Education Required Areas of Study (Arts and Humanities). Students also should consider a two-course basic language sequence toward this General Education requirement.

Students must complete MKT 301 plus one additional 300-level or above course (3 credits) in the School of Business Administration chosen with the prior approval of a Public Relations faculty advisor.

Students seeking a Marketing minor from the School of Business Administration must complete MKT 301 with a grade of B or higher, plus three of the following: MKT 310, MKT 320, MKT 340, and MKT 360. Students must earn a cumulative quality point average of 2.5 or higher in the four courses submitted for the minor. Consult the School of Business Administration section of this Bulletin.

Students seeking a General Business minor from the School of Business Administration must complete MKT 301, ACC 211, FIN 300 and MGT 304 with a cumulative quality point average of 2.0 or higher. Consult the School of Business Administration section of this Bulletin.

**MINOR**

The Public Relations minor requires five courses (15 credits) with a grade of C or better in each (a C- is not acceptable.) All must be taken in residence. Required courses for the minor in Public Relations: CPR 116, CPR 232, CPR 202 and/or CPR 311 (if both, only one elective will be required), CPR elective (300 level or higher), CPR elective (300 level or higher).

Elective choices must be approved by a Public Relations faculty advisor.

**DEPARTMENT HONORS**

School of Communication students may graduate with School Honors in Communication noted upon their diplomas and transcripts. Students should contact the School’s Office of Admissions, Academic & Alumni Services (2037 Wolfson Building) for details.

Students may receive recognition as graduates cum laude, magna cum laude, or summa cum laude if they meet the requirements set forth under GRADUATION HONORS in this Bulletin.

[Public Relations Course Listing](#)
The mission of the DCIE is to provide educational programs to meet the needs of non-traditional students, including adults, pre-college students, part-time students and international students.

Our primary goal is to promote the academic excellence of the University of Miami and the expertise of the faculty through outreach programs. By developing, marketing, and administering short courses, seminars, workshops, lectures, and special events, Continuing and International Education is able to provide access to the public at large as well as to degree seeking students. In addition, Continuing and International Education coordinates weekend credit courses and provides advising services for returning adult students. Continuing and International Education is an agent for University outreach in the community and serves the corporate world with professional certificates, continuing education and workforce training.

Allen Hall, on the Coral Gables Campus is the administrative headquarters for the DCIE and the location for the Intensive English Program, the Intensive Language Institute, and programs for adults returning to school and preparing for career advancement.
BACHELOR OF GENERAL STUDIES DEGREE PROGRAM

Introduction

Under the leadership of Collegiate Studies, the DCIE offers the Bachelor of General Studies (BGS) degree program, which provides a solid and rigorous, interdisciplinary academic experience for adult, part-time students. It is designed specifically for adults who have previously attended college but have not yet completed their undergraduate degrees, as well as for those who have never had the opportunity to pursue post-secondary studies. You are eligible for admission if you graduated from high school at least four years ago, have not attended the University of Miami during the past calendar year, have a minimum of 2.2 grade-point average on previous college work, and are a U.S. citizen or permanent resident.

The BGS curriculum allows an individual the flexibility to design an area of concentration to enhance professional or personal goals. The core of the BGS is its interdisciplinary colloquia. Designed to strengthen critical thinking and writing skills of the students, each course is taught by exceptional University of Miami faculty who are committed to the adult student.

Advisors offer personalized attention in career exploration and academic advising and discuss educational alternatives with potential students. Every effort is made to ensure that the process - from admission to registration - is efficient and convenient. Students may attend day, evening, or weekend classes to complete their educational goals.

To underscore its commitment to the adults in our community, the University offers a special tuition to students in the Bachelor of General Studies program which enables the adult, part-time student to pursue this degree at an affordable tuition rate.

The admission process takes into consideration that one’s grade-point average, while significant, is only one factor in determining an applicant’s qualification for acceptance. Therefore, an admissions interview with an advisor from the DCIE will be scheduled to supplement the information you provide on the BGS application form, which may be obtained by calling Collegiate Studies at (305) 284-2727 or at www.miami.edu/bgsdegree.

Requirements for Graduation

I. Candidates for the Bachelor of General Studies (BGS) degree must complete the required credit hours and achieve the quality point average specified for students in the University at large as stated in the section Academic Regulations and Procedures. Exempted is interpreted to refer exclusively to those exemptions provided under the following headings:

   A. Advanced Standing and Placement (Credit Granted);
   B. Credit by Examination;
   C. Advanced Placement (by proficiency examination);

II. Except where a required course is one designated to correct a deficiency in his/her college preparation, the student may apply the credit hours of any required course from which he is exempted toward the hours for that subject as a general requirement for graduation, toward the 120 credits required for graduation. (See Departmental Proficiency Examinations.) An exemption may be granted for English 105, but these credits may not be applied towards the 120 required for graduation.
III. Credit Only
Only free electives may be taken under this option. Courses which satisfy the major, the distributions of the School, the General Education Requirements of the University or any course for which a C or better is required may not be taken for credit only.

IV. Required Areas of Study

A. English Composition 3-6 credits
Students must take English 105 and 106 (or their equivalent) during the first year of enrollment in the School.

Foreign Languages 3-9 credits
Students must earn at least 3 credits of foreign language at the 200 course level or higher.

B. People and Society (History/Social Sciences) 15 credits
BGS degree candidates must earn 6 credits in a single two-semester History survey sequence. In addition, BGS degree candidates must earn 9 credits in courses taught by at least two of the following disciplines: African American Studies, American Studies in Social Science, Anthropology, Communication, Economics, Education and Psychological Studies, Geography, Judaic Studies, Political Science, Psychology and Sociology.

C. Arts and Humanities 21 credits
Credits must be earned in each of the following disciplines: Art History, Literature, Philosophy and Religious Studies.

In addition, BGS degree candidates must earn 9 credits in any of the following disciplines: American Studies in Humanities, Art, Art History, Communications (Motion Pictures), Dance, Theatre Arts, Musicology, English, Italian, German, Portuguese, Spanish or French Literature, Philosophy, Religion or Women’s Studies in Humanities.

D. Mathematics/Computer Information Systems 9 credits
Math 101 or an acceptable score on the math placement test is required. In addition, students must take either Math 103 (finite mathematics) or a math course approved by the advisor. Finally, a 3-credit course in computer information systems is also mandatory.

E. Natural World (Natural Sciences) 6 credits
BGS degree candidates may fulfill the Natural Sciences requirement by taking 6 credits in one or more of the following disciplines: Biology, Chemistry, Geological Sciences, Environmental Science, Marine Sciences, Physics and Physical Sciences.

V. Area of Concentration 30 Credits
Every candidate for a degree must select an area of concentration. The candidate designs an area of concentration that meets his/her professional and personal goals. The course of study is reviewed and approved by the Dean and/or Director of the program.

VI. Interdisciplinary Courses 15 Credits
BGS Interdisciplinary courses are especially designed to foster critical thinking and taught by faculty from all departments. Candidates for the BGS degree select 5 interdisciplinary courses to meet requirements for graduation (ENG 333 IS A REQUIRED COURSE)
VII. Electives  

15 credits  

Students choose elective courses in consultation with their advisor to meet the 120-credit graduation requirement.
CREDIT CERTIFICATE PROGRAMS

Not everyone needs or wants a complete degree program. Recognizing this, the DCIE - in cooperation with several other colleges and schools of the University - offers special Credit Certificate Programs.

Focusing on a single subject, these certificate programs allow students to concentrate on courses that offer the specific knowledge and skills needed for career advancement. All courses are taught by University of Miami faculty at the undergraduate level and are taken for academic credit.

Each certificate program varies in the number of required credits. While required courses are noted, students may work with an advisor in developing an individually-designed program.

Credit certificate programs are currently available in the following subject areas:

**Certificate in Accounting**
The Undergraduate Certificate in Accounting is awarded by the Division of Continuing and International Education and the Department of Accounting. It is designed for those who hold at least an undergraduate degree (preferably in business) from an accredited college or university, and whose present interest or occupation is accounting. The program requires students to take the same 24 semester hours of accounting courses required for the undergraduate major in Accounting. To sit for the Certified Public Accountant (CPA) examination in Florida, students must have completed 120 semester hours, including 24 semester hours of accounting (above the elementary level) and 24 semester hours of business courses, including a minimum of six hours of business law. There are additional educational requirements to become licensed as a Certified Public Accountant in Florida. Students may wish to consider either the Graduate Certificate in Accounting or the Graduate Certificate in Taxation (offered by the School of Business) to meet those additional education requirements.

**Certificate in Computer Information Systems**
The Certificate in Computer Information Systems program is designed to provide a broad background in business computer information systems and to develop the technical skills one needs to stay competitive in this challenging field. The program will be of particular benefit to programmers and to management information systems analysts. The certificate is awarded by the DCIE and the Department of Computer Information Systems upon the successful completion of 18 credits.

For more information, contact: Collegiate Studies, DCIE, University of Miami, P. O. Box 248005, Coral Gables, FL 33124-1610, (305) 284-2727.
OFFICE OF PROFESSIONAL ADVANCEMENT

Dedicated to providing the highest quality, competency-based, continuing professional education, the Office of Professional Advancement offers seminars, courses and certificate programs to meet the training and professional development needs of both corporations and individuals.

For more information, specific curriculum descriptions and a listing of current seminars, courses and workshops, contact the Office of Professional Advancement, DCIE, University of Miami, 111 Allen Hall, Coral Gables, Florida 33124-1610, (305) 284-5800 or email opa@miami.edu. Additional information on the web at: www.educationmiami.com.

Personal Financial Planning Certificate Program

Designed for students preparing for professional examinations and professional practice in personal financial planning.

Our program consists of providing the highest quality CFP education through Dalton Education, a leading provider of innovative education solutions in financial planning. The founders of Dalton Education have helped thousands of financial professionals earn the CFP® certification marks with their leading CFP review course, THE DALTON REVIEW®. Students can choose from an independent, self-paced, online education program or a live, instructor – led, internet delivered program.

For more detailed course descriptions, current schedule, and prices please visit our website at http://www.educationmiami.com/pfp.

Human Resources Management Certificate Program

This certificate provides the latest in proven techniques and strategies to effectively manage organizational challenges. The curriculum covers the following topics: Strategic Management, Legal and Regulatory Issues; Employment, Planning, and Placement; Benefits and Compensations: Development and Administration; Training and Development and Employee and Labor Relations. The HR Program is recognized by the Greater Miami Society for Human Resource Management. The comprehensive curriculum works for the newcomer as well as the seasoned professional and is especially useful to small and medium-size business owners. (6 months)

For more detailed course descriptions, current schedule, and prices please visit our website at http://www.educationmiami.com/hrm.

Alfus Patient Advocacy

This program offers a comprehensive curriculum geared to educate students in the complex field of the US healthcare system. Patient advocates strive to maintain high individual services for clients in a system that is frequently impersonal and intimidating. Classes are taught by industry leaders. The program is offered online in cohorts of 9 modules for a period of approximately 11 months. Upon completion, students are prepared to successfully enter this promising new field.

For detailed course descriptions, calendar and tuition cost, please visit our website at http://www.educationmiami.com/en/packagedetail.aspx?p=100
Paralegal Studies Certificate program

The UM Paralegal Studies program is an intense four-month course of study which certifies the successful student as a qualified professional ready to start an exciting new career as a paralegal. Classes are taught by prominent local attorneys, Judges and Magistrates. The Paralegal Program classes are offered on the weekends, weekdays or weekday evenings at the Coral Gables campus and on weekday evenings in Broward. This program is also available online in both English and Spanish. (4 months)

For more detailed course descriptions, current schedule, and prices please visit our website at [http://www.educationmiami.com/paralegal](http://www.educationmiami.com/paralegal).

Paralegal Specialist Certificate

The Paralegal Specialist Certificates provide both beginning and experienced paralegals with expansive educational and professional opportunities. The certificate programs allow paralegals to augment current skills and focus on virtually any area of the law. Choose from over 20 Paralegal Specialist Certificates and give yourself an edge in today’s competitive job market. All specialist courses are available online so students are able to enroll at any time. (6 months)

For more detailed course descriptions, current schedule, and prices please visit our website at [http://www.educationmiami.com/paralegal](http://www.educationmiami.com/paralegal).

Coaching Certificate Training Program

This Coach Certificate Training Program is designed to support you in becoming a professional coach or in using coaching skills to enhance your leadership, management, and/or communication skills. This program has been written by master coaches and aligns with the International Coach Federation (ICF) Core Coaching Competencies. The University of Miami has designed a thorough program that will allow you to make a powerful leap into using coaching skills and becoming a professional coach. The Certified Professional Coach Program is a 140 hour, eleven month program designed for those interested in a career in coaching, who also want outstanding training in order to serve clients at the highest level. Additionally, it is designed for leaders, managers, human resource professionals, teachers, or service professionals (doctors, lawyers, counselors, consultants, etc.) who want to dramatically improve their ability to communicate, motivate, inspire, and empower others.

For more detailed course descriptions, current schedule, and prices please visit our website at [http://www.educationmiami.com/coach](http://www.educationmiami.com/coach).

Residential Design Certificate Program

Taught by industry professionals, our Certificate in Residential Design program focuses on the many different aspects of the design trade. A hands-on program, students will prepare a portfolio of their work to help them to successfully enter a competitive marketplace. The course of study includes principles and elements of design, drafting, visual communication techniques, the history of styles, currently manufactured products, color theory, furniture design and construction, floor coverings, fabrics, and window treatments.
Computer Training Programs

Computer skills are essential to get a job or even to lead a productive life in the twenty-first century. The ability to use a computer is the new literacy. We offer a wide selection of classes that cater to different skill-levels and interests including our own UM certifications. Whether you are a beginner with no previous knowledge of computers, someone who wants to enhance their efficiency in the workplace, or an IT professional seeking a specific industry certification, we can offer the computer training that you need. Courses are offered on evenings and weekends.

Courses and Programs
For more detailed course descriptions, current schedule, and prices please visit our website at http://www.educationmiami.com/computer.

Office Productivity

Classes for Beginners
A great place to start! Our UM Computer Foundation course will help you develop a solid understanding of how computers work and teach you essential Internet skills. After you have mastered the fundamentals, you will be ready to explore Microsoft Windows and Word and develop the habits and learn the computer conventions which are used in all applications. This 6 hour course is designed for students with little or no computer experience. 6 hours

University of Miami Office Professional
The UM Office Professional is a certification course created by the University of Miami to establish a nationally recognized standard of business computer skills. The UM Office Professional is an intensive, hands-on computer training course which teaches, tests and certifies all the core skills for Microsoft Windows, Word, Excel, Access, PowerPoint and Outlook.

This 40-hour course is designed for people who have some basic computer experience and want to become proficient in all the popular Microsoft office applications. The UM Office Professional certificate will demonstrate to potential employers that you are proficient in all the core computer skills required in the modern work-place. This is an invaluable tool for the job seeker to establish their computer credentials. It is also invaluable for the employer seeking qualified and productive staff. A more detailed description can be found at http://www.educationmiami.com/en/packagedetail.aspx?p=9. 40 hours (5 weeks)

Students can choose individual 8-hour section or the complete 40 hour computer training program.

UM Web Designer Certificate Program:
UM Web Designer course teaches the core skills needed to become a professional web designer. Starting from scratch, students learn to pan design, create, launch, maintain, manage and update a professional website with the latest Adobe Dreamweaver. 40 hours (5 weeks)
Photoshop for Web Design:

The 24-hour (three weeks) UM Advance We Designer 1 - Photoshop for Web Designer course teaches the advance skills needed to become a professional web designer. New Adobe Photoshop will help you create powerful images with the professional standard for your website. Not only are students taught hands-on-skills, but also theory needed to design and create a successful website. 24 hours (3 weeks)

Flash for Web Design:

The 24-hour (three week) UM Advanced Web Designer 2 - Flash for Web Designer course teaches the advance skills needed to become a professional web designer. New Adobe Flash Professional will help you create and deliver rich interactive content for your website. Not only are students taught hands-on skills, but also theory needed to design and create a successful interactive Web site.

For more information about computer training:

Contact Us:
111 Allen Hall, 5050 Brunson Drive, Coral Gables, FL 33124 -1610
Phone: (305) 284-5800 Fax: (305) 284-6279 / www.educationmiami.com
ADULT STUDENT ACCESS PROGRAM (A.S.A.P.)

Students may take up to 30 credits in an undergraduate, non-degree seeking category, which may be applied to a degree program, after all application and degree-seeking requirements are met. In order to be enrolled in this category, students submit a one-page application and no other documents or transcripts; academic achievement is evaluated after 12 credits are attempted. A 2.5 G.P.A. is required to continue in the program beyond 12 attempted credits. The application for enrollment may be found on the Web at www.miami.edu/asap.

Students may take up to 6 credits, lifetime maximum, in a graduate, non-degree seeking category which may be applied to certain degree programs, after all application and degree seeking requirements are met. Not all graduate departments participate in this program. In order to enroll in this category, students submit a one-page application and no other documents or transcripts, after securing the written permission of the participating graduate department. The application for enrollment may be found on the Web at www.miami.edu/asap.

For more information, contact: The Adult Student Access Program, DCIE, University of Miami, P.O. Box 248005, Coral Gables, FL 33124-1610, (305) 284-2727.
INTENSIVE LANGUAGE INSTITUTE

The Intensive Language Institute offers comprehensive language instruction for academic, professional, and personal purposes. The Intensive English Program, a full-time course of study for international students who wish to pursue university studies in the United States, provides instruction in English language and academic study skills. The ILI also offers certificate programs, part-time language courses and customized language programs.

Intensive English Program

The Intensive English Program is designed to prepare students to participate successfully in the academic environment. Students are given a placement test upon arrival to determine the most appropriate level of study. Courses are offered at five levels of instruction. The skills-based curriculum integrates reading and writing, listening and speaking into one complete program of study. The focus is on English language acquisition and application in an academic setting. Specialized classes vary by level; focusing on the needs of the language learners. In Levels 1-3 students concentrate on reading skills and conversation. In Levels 4 and 5, courses on selected topics allow students to use their improving English to investigate areas of interest. Satisfactory completion of the highest level meets the English language requirement for acceptance to undergraduate programs at the University.

For more information contact:

Intensive English Program
PO Box 248005
Coral Gables, FL 33124-1610
(305) 284-2752
E-mail: iep@miami.edu
Visit our website at www.miami.edu/iep

Intensive Language Programs

Communicative language classes are offered in the evenings and on weekends in Spanish, Portuguese, Italian, French, Mandarin Chinese and ESL throughout the year. These courses focus on meaningful communication in the chosen language. Specialized classes focus on Accent Reduction, Medical Spanish or Medical Haitian Creole, and/or Business Writing. A 7-day immersion-style program in Spanish is also offered. Several non-credit certificates are available: the English for Law School Studies Certificate is a 6-week summer program for international students, the Business Communication Certificate focuses on oral and written skills necessary for the workplace, and the Teaching English as a Foreign Language Certificate teaches skills needed to teach ESL or EFL abroad. The Intensive Language Institute also develops and conducts customized language courses on or off campus tailored for individuals, groups, and organizations with specialized language training needs. For further information, or to register for classes, please call us at (305) 284-4000 or visit us on the web at: www.continue.miami.edu. Email: alc.cstudies@miami.edu.
University of Miami Global Academy
www.umga.miami.edu

University of Miami Global Academy (UMGA) offers an online middle and high school college preparatory program for both full-time and part-time students. Students have the option of either taking courses and transferring them back to their local school or completing all of their courses at UMGA and graduating from the University of Miami Global Academy. In addition, UMGA offers a summer school program where students have the opportunity to complete a semester course in 3 weeks whether for credit advancement or credit recovery. Whether taking a summer course or a full year course, students are provided with the following:

- Instruction from certified, highly qualified teachers
- Academic coaching to assist with schedules and college acceptance
- Small class size
- A highly interactive learning environment that promotes engagement
- Comprehensive curriculum offering regular, honors, Advanced Placement (AP) and world language courses including French, Latin, and Mandarin Chinese
- iESOL Program to increase English language proficiency

Additional information regarding middle school, high school, and summer school can be found at www.umga.miami.edu.
SCHOOL OF EDUCATION AND HUMAN DEVELOPMENT - UNDERGRADUATE
www.education.miami.edu

INTRODUCTION

The School of Education and Human Development offers undergraduate majors in Human and Social Development (Track I: Individual and Relational Development; Track II: Community and Program Development; Track III: Human and Social Development Studies, Athletic Training, Exercise Physiology, Sport Administration, Elementary Education (grades K-6)/Exceptional Student Education Specialization with ESOL Endorsement (K-12), Secondary English with ESOL Endorsement (K-12), and Secondary Chemistry, Biology, Mathematics and Social Science (grades 6-12).

The degrees of Master of Science in Education, Specialist in Education, and Doctor of Philosophy are available in various departments within the School. These programs are under the supervision of the Dean of the Graduate School and the School of Education and Human Development Associate Dean for Graduate Studies.

VISION/MISSION

Our vision is to be a center of excellence in the study, promotion and integration of educational, psychological, and physical well-being in multicultural communities. Our mission is to produce knowledge and prepare the next generation of leaders, researchers, and agents of change and well-being in education and the community.

ACADEMIC POLICIES

Admission

Applications for incoming freshman are processed and reviewed by the Office of Admission. Application to the Bachelor of Science in Education program is requested by February 1st. Early application is encouraged.

Transfer students: The academic accomplishments of each transfer student will be evaluated on an individual basis. A 3.0 GPA is recommended for transfer admission.

Application deadline for transfer students is March 1st.

Student Responsibilities

Students are responsible for planning their own programs and for meeting degree requirements. It is the student’s responsibility to understand and fully comply with the provisions set forth in this Bulletin and written changes to their program of study. Written requests for variation from program or school requirements are reviewed by an administrative committee.

A student advising compact specifies the dual responsibilities between students and advisors in each program.
Academic Progress and Probation

The School will review each student’s record at the end of each semester. When a student’s semester or cumulative average is less than stated below, or progress toward degree completion is unsatisfactory, the student will be placed on academic probation or warning in accordance with the School of Education and Human Development policies and procedures.

Students on probation are not permitted to enroll in more than 12 semester hours, shall make arrangements to meet on a monthly basis with their academic advisor, and may have a STOP placed on their future enrollment until grades are further reviewed. The following criteria will determine probationary status.

<table>
<thead>
<tr>
<th>Credits Earned</th>
<th>CGPA</th>
<th>CGPA (Exercise Physiology majors only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fewer than 30</td>
<td>1.7</td>
<td>2.0</td>
</tr>
<tr>
<td>30-59 credits</td>
<td>2.0</td>
<td>2.5</td>
</tr>
<tr>
<td>60+ credits</td>
<td>2.3</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Note: There are different retention and probation policies for Athletic Training majors. Please see the Athletic Training website or the Athletic Training Guidelines Manual for this and other important information regarding the requirements for completion of the Athletic Training major.

Note: The minimum GPA required for graduation from a Teacher Education Program is 2.5.

Subject to Dismissal

A student who remains on academic probation twice during their undergraduate studies can be designated as “Subject to Dismissal“ and will be dismissed the following semester if not removed from probationary status. It is not required to be on this status to be dismissed from the School of Education and Human Development or from the University of Miami.

Academic Dismissal

A student in the School of Education and Human Development whose CGPA or progress toward degree completion, falls below the level of the minimum standards of the University of Miami and/or the School of Education and Human Development, may be dismissed.

ACCREDITATION

Kinesiology and Sport Sciences offers the Athletic Training Program that is accredited by the Commission on Accreditation of Athletic Training Education (CAATE); the Sport Administration Program is approved by the North American Society of Sport Management. Teacher Education Programs offered by the School of Education and Human Development are approved by the Florida Department of Education. In conjunction with the Phillip and Patricia Frost School of Music, the School of Education and Human Development offers Teacher Education Programs in Music Education at the undergraduate and graduate levels. Students who successfully complete their program of studies and submit an application to the Florida Department of Education - Bureau of Educator Certification are eligible to receive a Professional Teaching Certificate.
DEGREE PROGRAMS - UNDERGRADUATE

DEPT. of EDUCATIONAL AND PSYCHOLOGICAL STUDIES
Dept. Code: EPS

MAJOR
Bachelor of Science in Education: Human and Social Development

The major in Human and Social Development (HSD) focuses on the promotion of healthy development and well-being. It prepares students to work with people in multiple contexts and settings:

- health and human services
- schools, universities, and community programs
- government and non-government agencies
- grass-roots movements

By exploring the scholarly and practical interconnections among individual, interpersonal, social, and community approaches to change, students learn to identify barriers to well-being and to implement effective change-oriented strategies and policies. HSD coursework emphasizes theory, research, and skills. It culminates in a practicum in a setting related to students’ area of interest and prepares them for both graduate studies and careers.

Students choose between three areas of concentration (tracks).

Track I: Individual and Relational Development (Track Code: HSDI)
This track emphasizes individual, relational, and family well-being. Focusing on context and diversity in mental health and on strength-based, preventive, and empowering approaches, courses cover family studies, counseling theories and techniques, interviewing skills, and the basics of human service work. Students are well-prepared for graduate study in the helping professions and careers in health and human services.

Track II: Community and Program Development (Track Code: HSDC)
This track promotes healthy individual and community development by emphasizing how social, institutional, and community dynamics affect personal well-being. Stressing the role of non-government agencies in fostering well-being for people with diverse backgrounds, HSDC prepares students to diagnose institutional and community challenges and offer strategies for positive change. Courses include community-focused planning, needs assessment, and change strategies and nonprofit program development, implementation, and evaluation. Students are well prepared for graduate study in community psychology and public policy and careers in community organizations.

Track III: Human and Social Development Studies (Track Code: HSDS)
This is a general track which offers a menu of courses relating to individual and community development. HSDS students are free to combine classes from the Individual (HSDI) and Community (HSDC) tracks. This track meets the needs of students who seek greater flexibility in course work and are less concerned with specializing in the individual or community tracks.

HSD students must declare an approved second major or a minor either in the School of Education or through any other school or college.
The following courses are required for the Human and Social Development major:

**HSD Track I: Individual and Relational Development (HSDI)**
EPS 201 Psychosocial Change and Well-Being  
EPS 270 Lifespan Human Development  
EPS 280 Introduction to Family Studies: Dating, Coupling, Parenting  
EPS 291 Community and Character Development  
EPS 311 Group Processes and Development  
EPS 321 Understanding Human Service Organizations  
EPS 351 Introduction to Statistics and Research Design  
EPS 361 Community Psychology and Development  
EPS 420 Introduction to Counseling and Psychotherapy  
EPS 422 Foundations of Human Service Work and Program Administration  
EPS 470 Listening and Helping Skills  
EPS 471 Human and Social Development Practicum  
EPS 481 Human and Social Development Practicum Seminar

**HSD Track II: Community and Program Development (HSDC)**
EPS 201 Psychosocial Change and Well-Being  
EPS 270 Lifespan Human Development  
EPS 291 Community and Character Development  
MGT 304 Organizational Behavior  
EPS 311 Group Processes and Development  
EPS 321 Understanding Human Service Organizations  
EPS 351 Introduction to Statistics and Research Design  
EPS 361 Community Psychology and Development  
EPS 422 Foundations of Human Service Work and Program Administration  
EPS 452 Applied Research and Program Evaluation  
EPS 462 Community Consultation and Leadership  
EPS 471 Human and Social Development Practicum  
EPS 481 Human and Social Development Practicum Seminar

**HSD Track III: Human and Social Development Studies**
EPS 201 Psychosocial Change and Well-Being  
EPS 270 Lifespan Human Development  
EPS 291 Community and Character Development  
EPS 311 Group Processes and Development  
EPS 321 Understanding Human Service Organizations  
EPS 351 Introduction to Statistics and Research Design  
EPS 361 Community Psychology and Development  
EPS 422 Foundations of Human Service Work and Program Administration  
EPS 471 Human and Social Development Practicum  
EPS 481 Human and Social Development Practicum Seminar
Three courses from the following list:

EPS 280 Introduction to Family Studies: Dating, Coupling, Parenting
EPS 420 Introduction to Counseling and Psychotherapy
EPS 470 Listening and Helping Skills
MGT 304 Organizational Behavior
EPS 452 Applied Research and Program Evaluation
EPS 462 Community Consultation and Leadership

MINOR IN HUMAN AND SOCIAL DEVELOPMENT – Code for Minor: HSDM

- The requirements of the minor are 15 credits with a grade of “C” or better.
- Nine of these 15 credits must have been completed in the Department of Educational and Psychological Studies (EPS); with prior approval, three of these nine may be taken through the UM Study Abroad Program.
- EPS 201—Psychosocial Change and Well Being is required
- Two courses must be upper division courses (at or above the 300 level)
- The undergraduate coursework in Human and Social Development is open to all qualified University of Miami students.
- Determination for using these courses as a minor, as a specialization, and/or as electives in any program, is made by the individual student’s degree granting college or school.

REQUIREMENTS FOR GRADUATION

BACHELOR OF SCIENCE IN EDUCATION

I. Candidates for B.S.Ed. in the School of Education and Human Development must complete the credit hours of work and achieve the quality point average specified for students in the University at large as stated in the section ACADEMIC REGULATIONS AND PROCEDURES, subject to regulations concerning the major specified in departmental and program sections of this Bulletin.

Exempted is interpreted to refer exclusively to those exemptions provided under the following headings:

- Advanced Standing and Placement (Credit Granted);
- Credit by Examination;
- Advanced Placement (by proficiency examination);
- Statement of Foreign Language Requirements;

II. Except where a required course is one designated to correct a deficiency in his/her college preparation, the student may apply the credit hours of any required course from which he is exempted toward the hours specified for that subject as a general requirement for graduation and, upon payment of a recording fee, toward the 120 credits required for graduation. (See Departmental Proficiency Examinations.) An exemption may be granted for English 105, but these credits may not be applied toward the 120 credits required for graduation.

III. Credit Only. Only free electives may be taken under this option. Courses which satisfy the major, minor, the distributions of the School, the General Education Requirements of
the University or any course for which a “C” or better is required may not be taken for credit only.

IV. Transferred credit may not count toward the completion of a major without the written approval of the Associate Dean of the School of Education and Human Development.

V. Required Areas of Study

A. English Composition 3 – 6 credits

Students fulfill this requirement by satisfactorily completing English 105 and English 106 or its equivalent. Appropriate Advanced Placement (AP) or International Baccalaureate (IB) scores in English composition may be used to satisfy the English 105/106 requirement. An appropriate score on the SAT or ACT verbal examination may earn a student exemption from, but not credit in, ENG 105. Appropriate scores on other tests determined by the Department of English may earn a student exemption from, but not credit in, English 105. Courses satisfying the English Composition requirement may not be used to fulfill the Writing Across the Curriculum Required Area of Study.

B. Mathematics

B.S.Ed. degree candidates in the Department of Educational and Psychological Studies are required to take EPS 351 – Introduction to Statistics and Research Design. This course fulfills a Math requirement for the HSD major. Prior to taking EPS 351, students must complete MTH 101 or be exempt from MTH 101 based on any of the following tests: AP, IB, or an examination administered by the Department of Mathematics.

C. Foreign Languages (not applicable)

Areas of Knowledge

D. People and Society

B.S.Ed. Degree candidates must earn 9 credits in the Social Sciences.

E. Arts and Humanities

B.S.Ed. degree candidates must earn 12 credits in the areas of 1) Fine Arts and 2) Humanities with a minimum of three credits in each area. All Humanities credits must be earned in courses from the areas of Literature or Philosophy/Religion.

F. Natural World

B.S.Ed. degree candidates may fulfill the Natural Sciences requirement by taking 6 credits in the following disciplines: Biology, Chemistry, Exercise Physiology, Geological Sciences, Marine Sciences, Physics, and Physical Sciences.

Note: No more than six credit hours may be taken in any one department to satisfy the areas of knowledge requirement.
VI. Writing

Every student must complete five writing-oriented (W) courses beyond ENG 105 and 106. Students must take one approved writing course section per academic year for a minimum of five writing intensive course sections, or their equivalents. A student is required to write at least 4000 words in each W course. Writing assignments will be assessed for both content and style. A W course listed in section VII (Required Areas of Study) may be used to satisfy both the writing and Required Areas of Study criteria. Foreign language courses that meet the criteria above may be used to satisfy the writing requirement. Transfer students must satisfy at least 3 courses of the writing requirement at the University of Miami.

VII. Major in Human and Social Development

- Every candidate for the B.S.Ed. degree in the Department of Educational and Psychological Studies must choose a major in Human and Social Development.
- Students choose between three areas of concentration: Track I – Individual and Relational Development (HSDI); Track II – Community and Program Development (HSDC); Track III – Human and Social Development Studies (HSDS). To find the requirements for the major, consult this Bulletin under the discipline concerned, and confer with the designated departmental representative.
- HSD majors must maintain a minimum overall grade point average of 2.0 with a grade of “C” or better in all courses in the major.
- HSD students must declare an approved second major or a minor in the School of Education and Human Development or through any other UM school or college.

VIII. Electives

Electives may be chosen from any courses offered by the University. The student should consult an advisor before selecting elective courses. At least six credits must be at the 300 level or above.

IX. Seniors are required to participate in the General Education Assessment prior to graduation as part of the SACS review process.

For further information, address all inquiries to: Associate Dean; School of Education and Human Development; P. O. Box 248065; University of Miami; Coral Gables, Florida 33124; Telephone: (305) 284-3415.

See the Department of Educational and Psychological Studies for list of courses:

Educational and Psychological Studies Course Listing
DEPT. of KINESIOLOGY AND SPORT SCIENCES
Dept. Code: KIN

MAJORS

Bachelor of Science in Education, Athletic Training

The Athletic Training program at the University of Miami is an undergraduate education program that has been accredited by CAATE. The program is designed to provide a structured classroom and clinical experience to prepare students to become eligible to sit for the Board of Certification exam; Didactic courses are sequenced to maximize student learning. Please see the Athletic Training website or the Athletic Training Guidelines Manual for the course sequence form and other important information regarding the requirements for completion of the Athletic Training major.

- A degree in Athletic Training requires a major GPA of 3.0 or higher and an overall GPA of 2.3 or higher.
- Seniors are required to participate in the General Education Assessment prior to graduation as part of the SACS accreditation review process.

Courses for the Athletic Training major:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>KIN 140</td>
<td>Introduction to Athletic Training</td>
</tr>
<tr>
<td>KIN 141</td>
<td>Introduction to Athletic Training Lab</td>
</tr>
<tr>
<td>KIN 145</td>
<td>Responding to Emergencies</td>
</tr>
<tr>
<td>KIN 184</td>
<td>Athletic and Sport Injuries</td>
</tr>
<tr>
<td>KIN 202</td>
<td>Applied Nutrition for Health &amp; Performance</td>
</tr>
<tr>
<td>KIN 210</td>
<td>Foundations to Athletic Training</td>
</tr>
<tr>
<td>KIN 212</td>
<td>Elements of Sports Psychology</td>
</tr>
<tr>
<td>KIN 221</td>
<td>Exercise Physiology</td>
</tr>
<tr>
<td>KIN 230</td>
<td>Medical Terminology and Documentation</td>
</tr>
<tr>
<td>KIN 232</td>
<td>Basic Human Physiology</td>
</tr>
<tr>
<td>KIN 234</td>
<td>Functional Human Anatomy</td>
</tr>
<tr>
<td>KIN 235</td>
<td>Personal and Community Health</td>
</tr>
<tr>
<td>KIN 250</td>
<td>Orthopedic Assessment: Lower Extremity</td>
</tr>
<tr>
<td>KIN 251</td>
<td>Orthopedic Assessment: Lower Extremity Lab</td>
</tr>
<tr>
<td>KIN 260</td>
<td>Orthopedic Assessment: Upper Extremity</td>
</tr>
<tr>
<td>KIN 261</td>
<td>Orthopedic Assessment: Upper Extremity Lab</td>
</tr>
<tr>
<td>KIN 264</td>
<td>General Medical Conditions Evaluation</td>
</tr>
<tr>
<td>KIN 345</td>
<td>Kinesiology</td>
</tr>
<tr>
<td>KIN 365</td>
<td>Principles of Exercise Prescription</td>
</tr>
<tr>
<td>KIN 443</td>
<td>Athletic Training Lab I, Clinical</td>
</tr>
<tr>
<td>KIN 444</td>
<td>Athletic Training Lab II, Clinical</td>
</tr>
<tr>
<td>KIN 455</td>
<td>Athletic Training Lab III, Clinical</td>
</tr>
<tr>
<td>KIN 456</td>
<td>Athletic Training Lab IV, Clinical</td>
</tr>
</tbody>
</table>
The Undergraduate program at the University of Miami is designed for students to acquire a sound knowledge base in the sciences followed by the application of that knowledge base to human movement, exercise and sports performance. Clinical laboratory experiences supplement applied scientific theory in a rigorous academic setting.

Students may pursue a pre-med track concurrent with the Exercise Physiology major and should inform their advisor if selecting this track.

A degree in Exercise Physiology requires a major GPA of 2.5 or higher for below 30 credit hours and a GPA of 2.75 for 30 and above credit hours.

Students transferring from another college or university must have a CGPA of 2.75 or above to be considered for admission to the major.

A grade of C or better is required for each course applied toward the major. Students are allowed to retake a course one time.

All 100 level courses and KIN 212, 202, and 232 are open to non-majors. All other courses are open to majors and minors only.

Seniors are required to participate in the General Education Assessment prior to graduation as part of the SACS accreditation review process.

**Courses for Exercise Physiology major:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>KIN 202</td>
<td>Applied Nutrition for Health and Performance</td>
</tr>
<tr>
<td>KIN 212</td>
<td>Elements of Sports Psychology</td>
</tr>
<tr>
<td>KIN 221</td>
<td>Exercise Physiology</td>
</tr>
<tr>
<td>KIN 222</td>
<td>Exercise Physiology Laboratory: Neuromuscular</td>
</tr>
<tr>
<td>KIN 232</td>
<td>Basic Human Physiology</td>
</tr>
<tr>
<td>KIN 233</td>
<td>Basic Anatomy Lab</td>
</tr>
<tr>
<td>KIN 246</td>
<td>Gross Anatomy</td>
</tr>
<tr>
<td>KIN 321</td>
<td>Introduction to Systemic Exercise Physiology</td>
</tr>
</tbody>
</table>
KIN 322  Exercise Physiology Laboratory: Cardiorespiratory
KIN 345  Kinesiology
KIN 365  Principles of Exercise Prescription
KIN 366  Exercise Prescription Lab
KIN 421  Systemic Exercise Physiology
KIN 457  Clinical Internship in ESS
KIN 466  Principles of Exercise Prescription: Neuromuscular
KIN 477  Advanced Nutrition for Fitness and Sports

Writing Credit Courses – Exercise Physiology

Courses will be available for writing credit for Exercise Physiology pending individual request by students provided the following stipulations are met:

1. Permission of instructor
2. The course is under the direction of a full-time faculty member in Exercise Physiology
3. The student completes a writing credit agreement form and submits this form to the instructor within the first three weeks of a semester
4. The student completes assigned writing credit work by the end of the semester.
5. Assignments completed for writing credit are in addition to work normally required in the course
6. Students may be required to submit written work to the University of Miami Writing Center for review

University of Miami Honors Program – Exercise Physiology

The courses below will be available for honors credit for Exercise Physiology students provided the following stipulations are met:

1. The course is under the direction of a full-time faculty member in Exercise Physiology
2. The student completes an honors project permission form and submits this form to the instructor within the first three weeks of the semester.
3. The student completes assigned writing credit work by the end of the semester.
4. Assignments completed for honors credit are in addition to the University of Miami Writing Center for review.

The University of Miami currently has a 5-year program for undergraduate Exercise Physiology majors who want to obtain a Master’s Degree in Exercise Physiology. This can be done by taking one additional year of graduate courses. These students must take two graduate courses in Exercise Physiology in their senior undergraduate year in order to get an M.S.Ed. degree in Exercise Physiology in one extra year. Please check our website www.education.miami.edu for additional information on the “5-year program”. To be eligible you must apply for entrance into the 5-year program no later than the Fall of your junior year.
Bachelor of Science in Education, Sport Administration

- The Sport Administration major at the University of Miami is an undergraduate education program designed to prepare students for careers in the sport industry. The program is committed to the professional development of students so that competencies and skills relevant to the Sport Industry can be acquired over time. Specific competencies in organization, ethics, marketing, leadership and legal issues are emphasized.
- Field experience and internships are an essential component of the major. The KIN department is actively engaged in placing students in visible sports settings and appropriate sport environments so that students acquire relevant competencies and gain pragmatic hands-on experiences that are necessary for success in today’s sport industry.
- The Sport Administration major is a 39-credit major leading to a Bachelor of Science in Education.
- A Business Administration minor is suggested to complement the Sport Administration major and provide a well-rounded comprehensive background to the Sport Administration field. A minor in any field is required.
- Students pursuing a degree in Sport Administration must receive a grade of B- or higher in KIN 201 in order to continue with the major.
- **Students will be allowed to retake a course once.**
- A degree in Sport Administration requires a major GPA of 2.5 or higher and an overall GPA of 2.3 or higher.
- KIN 306 and 308 may not be taken in the same semester and must be taken during junior year.
- A grade of C or better is required for each course applied toward the major with the exception of KIN 201 which requires a grade of a B- or higher in the course as previously specified.

**Courses for the Sport Administration major:**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>KIN 201</td>
<td>Introduction to Sport Administration</td>
</tr>
<tr>
<td>KIN 206</td>
<td>Sport Facilities and Event Management</td>
</tr>
<tr>
<td>KIN 212</td>
<td>Elements of Sports Psychology</td>
</tr>
<tr>
<td>KIN 302</td>
<td>Sport Marketing</td>
</tr>
<tr>
<td>KIN 306</td>
<td>Essential Leadership in Sports and the Professions</td>
</tr>
<tr>
<td>KIN 308</td>
<td>Ethical Decision Making in Sport and the Professions</td>
</tr>
<tr>
<td>KIN 401</td>
<td>Legal Aspects of Sport</td>
</tr>
<tr>
<td>KIN 403</td>
<td>Sport Information Management</td>
</tr>
<tr>
<td>KIN 405</td>
<td>Finance and Budget in Sport Administration</td>
</tr>
<tr>
<td>KIN 410</td>
<td>Problems and Issues in Sport Administration</td>
</tr>
<tr>
<td>KIN 497</td>
<td>Internship in Sport Administration (9 Credit Hours)</td>
</tr>
<tr>
<td>KIN 498</td>
<td>Seminar in Sport Administration</td>
</tr>
</tbody>
</table>

**MINORS**

A minor in any of the five areas below consists of 14-15 credits:
A minor in **Exercise Physiology** consists of KIN 155, KIN 202, KIN 232, KIN 233 and KIN 365.

A minor in **Sports Medicine** consists of KIN 155, KIN 184, KIN 230, KIN 234, KIN 235 and KIN 301.

A minor in **Sport Administration** consists of KIN 201, plus four (4) courses taken from the following: KIN 206, KIN 212, KIN 302, KIN 306 or KIN 308, KIN 401, KIN 403, KIN 405, KIN 473 or KIN 490.

- A grade of C or better is required for each course applied toward the minor; the overall quality point average for the minor must be 2.5 or above.
- The undergraduate coursework in Exercise Physiology, Sports Medicine, and Sport Administration are open to all qualified University of Miami students. A student can minor in either exercise physiology or sports medicine. Determination for using these courses as a minor, as a specialization, and/or as electives in any program, is made by the individual student’s degree granting college or school.

Seniors are required to participate in the General Education Assessment as part of the SACS review process.

**REQUIREMENTS FOR GRADUATION**

**BACHELOR OF SCIENCE IN EDUCATION**

I. Candidates for B.S.Ed. in the School of Education and Human Development must complete the credit hours of work and achieve the quality point average specified for students in the University at large as stated in the section ACADEMIC REGULATIONS AND PROCEDURES, subject to regulations concerning the major specified in departmental and program sections of this Bulletin. Exempted is interpreted to refer exclusively to those exemptions provided under the following headings:

   A. Advanced Standing and Placement (Credit Granted);
   B. Credit by Examination;
   C. Advanced Placement (by proficiency examination);
   D. Statement of Foreign Language Requirements;

II. Except where a required course is one designated to correct a deficiency in his/her college preparation, the student may apply the credit hours of any required course from which he is exempted toward the hours specified for that subject as a general requirement for graduation and, upon payment of a recording fee, toward the 120 credits required for graduation. (See Departmental Proficiency Examinations.) An exemption may be granted for English 105, but these credits may not be applied toward the 120 credits required for graduation.

III. Credit Only

Only free electives may be taken under this option. Courses which satisfy the major, minor, the distributions of the School, the General Education Requirements of the University or any course for which a C or better is required may not be taken for credit only.

IV. Transferred credit may not count toward the completion of a major without the written
approval of the Associate Dean of the School of Education and Human Development.

V. Required Areas of Study.

A. **English Composition.**
   Students must take English 105 and 106 (or their equivalent) during the first year of enrollment in the School. Admission to English 105 requires a placement score acceptable to the Department of English. Students whose placement scores are deemed unacceptably low will be required to take the non-credit course, ENG 103, before taking ENG 105 and 106. Students whose placement scores are high may be exempt from ENG 105 but not from ENG 106 or its equivalent.

B. **Mathematics**
   B.S.Ed. degree candidates must complete MTH 113 or higher. Students who do not place directly into MTH 113 must enroll in either MTH 099 or MTH 101 based on results of placement tests.

C. **Foreign Languages (applicable to Sport Administration majors only)**
   Students must earn at least 3 credits of a foreign language at the 200 course level or higher. Special 200-level courses are required of native speakers who choose to fulfill the language requirement.

   **Areas of Knowledge**

D. **People and Society**
   B.S.Ed. degree candidates must earn 9 credits in the History/Social Sciences. *Three of these credits must be earned in ESS 212 Elements of Sport Psychology.*

E. **Arts and Humanities**
   B.S.Ed. degree candidates must earn 12 credits, which must be earned in the areas of 1) Fine Arts; 2) Humanities with a minimum of 3 credits in each area. The literature requirement may not be fulfilled by a course that has been used to fulfill the foreign language requirement. All Humanities credits must be earned in courses from among the following:
   1. Fine Arts: *Note: COS 211 Public Speaking is required of all Sport Administration majors.
   2. Literature
   3. Philosophy/Religion

F. **Natural World**
   B.S.Ed. degree candidates may fulfill the Natural Sciences requirement by taking 6-12 credits (credits required depends on the program in which the student is enrolled) in the following disciplines: Biology, Chemistry, Geological Sciences, Marine Sciences, Physics, Physical Sciences, and designated ESS classes.

   **Note:** No more than six credit hours may be taken in any one department to satisfy the areas of knowledge requirement.

VI. Writing

Every student must complete five writing-oriented (W) courses beyond ENG 105 and 106. Students must take one approved writing course section per academic year for a minimum of five writing intensive course sections, or their equivalents. A student is required to write
at least 4000 words in each W course. Writing assignments will be assessed for both content and style. A W course listed in section V (Required Areas of Study) may be used to satisfy both the writing and Required Areas of Study criteria. Foreign language courses that meet the criteria above may be used to satisfy the writing requirement. Transfer students must satisfy at least 3 courses of the writing requirement at the University of Miami.

VII. Majors

Every candidate for the B.S.Ed. degree must choose a major in Athletic Training, Sport Administration or Exercise Physiology. To find the requirements for the major, consult this Bulletin under the discipline concerned, and confer with the designated departmental representative.

The choice of majors should be made no later than the beginning of the junior year and must be approved by the major department. Any student making unsatisfactory progress in a major may be required to change his/her major or to relinquish candidacy for the degree.

VIII. Minors

B.S.Ed. candidates in Sport Administration and Exercise Physiology are required to declare a minor. Sport Administration students require department approval before declaring a minor. Exercise Physiology students may choose not to declare a minor if they’re following the pre-med track, pre-physical therapy, pre-physician’s assistant or pre-chiropractic track.

IX. Electives

Electives may be chosen from any courses offered by the University. The student should consult an advisor before selecting elective courses. At least six credits must be at the 300 level or above.

For Graduate Coursework, Graduate Degree Programs Offered by The School of Education and Human Development, see the Bulletin of the Graduate School.

For further information, address all inquiries to: Dean; School of Education and Human Development; P. O. Box 248065; University of Miami; Coral Gables, Florida 33124; Telephone: (305) 284-3711

Exercise and Sport Sciences Course Listing
DEPT. of TEACHING AND LEARNING
Dept. Code: TAL

The Department of Teaching and Learning offers a Bachelor of Science in Education Degree in Elementary Education (grades K-6)/Exceptional Student Education Specialization (grades K-12) with ESOL (English for Speakers of Other Languages) endorsement.

In conjunction with the College of Arts and Sciences, the Department also offers majors in Secondary Education in English with ESOL endorsement, in Chemistry, in Biology, in Mathematics, and in Social Science (grades 6-12). Students in Secondary Education programs are required to fulfill the general education requirements for the College of Arts and Sciences.

The Department offers two minors: (1) a traditional 15-credit minor, and (2) a 17-18-credit minor that fulfills the State of Florida “Professional Training Option” (PTO) for teaching in-secondary-school English, secondary school mathematics, secondary-school science, secondary-school social studies, or in other areas of certification. In order to obtain teaching credentials from the State of Florida, a PTO completer must teach in an accredited school in Florida for one academic year.

MAJORS

Elementary Education/ESE Specialization with ESOL Endorsement

The Department of Teaching and Learning offers a major in Elementary Education that leads to certification in Elementary Education (grades K-6)/ESE Specialization with ESOL endorsement. The requirements for Elementary Education are a major in Elementary Education/ESE/ESOL and a minor outside of the Department of Teaching and Learning. Students must earn a grade of “C” or better in all courses in their major. The following Education courses are required for the major:

TAL 101 Social and Technological Foundations of Education OR
TAL 103 Psychological Foundations of Education
TAL 305 Classroom and Behavior Management
TAL 308 Language Development for Linguistically and Culturally Diverse Students
TAL 322 Mathematics Instruction in the Elementary School
TAL 323 Science and Social Studies Instruction in the Elementary School
TAL 420 Introduction to Literacy Assessment and Instruction in the Elementary School
TAL 421 Language Arts in the Elementary School
TAL 426 Practicum in Reading
TAL 428 ESOL Curriculum, Methods, & Assessment
TAL 470 Student Teaching in the Elementary School (Semester-Long)
TAL 480 Seminar on Teaching

Please note: Students may not register for any classes above TAL 323 without admission to Teacher Candidacy.

Please note: Students are strongly recommended to register for TAL 203: Children’s Literature and TAL 324: Education and the Arts. Both courses meet general education requirements in the Arts and Humanities.
Area of Specialization (Required)

TAL 330 Foundations of Exceptional Student Education
TAL 332 Assessment of Exceptional Students
TAL 432 Inclusive Models of Teaching
TAL 434 Specialized Instructional Strategies/Transition

Secondary Education

The Department of Teaching and Learning offers a major in Secondary education (grades 6-12). Certification is offered in the general areas of: English/ESOL Endorsement; Mathematics; Sciences (Biology, Chemistry); Social Science (Economics, Geography, History, International Studies, or Political Science). Each student should complete a major from the appropriate department in the College of Arts and Sciences and a second major in the Department of Teaching and Learning.

The requirements for a major leading to secondary certification include

(a) a major in the appropriate field of Arts and Sciences (Biology, Chemistry, Economics, English, Geography, International Studies, History, Math or Political Science only)

and

(b) the following education courses:

TAL 101 Social and Technological Foundations of Education
TAL 103 Psychological Foundations of Education
TAL 304 Content Area Reading and Learning Strategies
TAL 305 Classroom and Behavior Management
***TAL 308 Language Development for Linguistically and Culturally Diverse Students (for Secondary English majors only)
TAL 330 Foundations of Exceptional Student Education
***TAL 428 ESOL Curriculum Methods and Assessment (for Secondary English majors only)
TAL 434 Specialized Instructional Strategies/Transition
TAL 506 Issues and Strategies for ESOL (this course is not appropriate for English majors)
TAL 540 Instruction and Assessment in the Secondary School
TAL 572 Student Teaching in the Secondary School
TAL 580 Seminar on Teaching

One course selected from the following list as appropriate for the subject area

TAL 541 Instruction in Secondary English
TAL 542 Instruction in Secondary Mathematics
TAL 543 Instruction in Secondary Science
TAL 544 Instruction in Secondary Social Studies
TAL 428 ESOL Curriculum Methods and Assessment

Please note: Students may not register for classes above TAL 304 without admission to Teacher Candidacy.
MINORS

Education Minor (not for certification)

The requirements for a minor in education consist of 15 credits passed with a “C” or higher, with an overall GPA of 2.5 in courses selected from the list of acceptable TAL departmental courses. A minimum of six (6) credits must be numbered 300 or higher. This minor does not lead to teaching credentials.

Professional Training Option Certificate

The Professional Training Option (PTO) is a Florida Department of Education approved pathway for non-education majors to complete the Professional Education component, one of the requirements to become a certified teacher in the State of Florida. Please be advised that students seeking the PTO must be majoring in a teachable area in order to participate in the program.

The PTO minor consists of 17-18 credits passed with a “C” or higher with an overall gpa of 2.5 or higher. Upon completion of the program courses, participants will receive a Certificate of Completion. UM transcripts will indicate that the student has completed a Florida State approved PTO program. Program completers will be eligible to apply for a 3-year Temporary Teaching Certificate in the State of Florida. There is a one year teaching requirement in a Florida public school in order to apply for a Professional Teaching Certificate.

The required courses for the PTO minor are:

TAL 101 Social and Technological Foundations of Education
TAL 103 Psychological Foundations of Education
TAL 304 Content Area Reading and Learning Strategies
TAL 305 Classroom and Behavior Management
TAL 540 Instruction and Assessment in the Secondary School

One course selected from the following list as appropriate for the subject area and approved by the advisor:
TAL 506 Issues and Strategies for ESOL
TAL 524 Education and the Arts
TAL 541 Instruction in Secondary English
TAL 542 Instruction in Secondary Mathematics
TAL 543 Instruction in Secondary Science
TAL 544 Instruction in Secondary Social Studies

PROFESSIONAL DEVELOPMENT SCHOOLS

Bel-Aire Elementary, Henry S. West Laboratory Elementary, Sunset Elementary, Ponce de Leon Middle School and Booker T. Washington Senior High School are operated by Miami-Dade County Public Schools. These schools provide the most up-to-date teaching environments, both in terms of design and curriculum, work in partnership with the University of Miami. Students are welcomed at these facilities for field experiences and student teaching, and both students and faculty have the opportunity to contribute to the high quality functioning of these professional development schools.
TEACHER Preparation PROGRAMS

Teacher Preparation Programs/majors in Elementary Education and Secondary Education that lead to a professional certification and applicable endorsements are approved by the Florida Department of Education (FLDOE). Please be advised that the State may implement new requirements for certification. These requirements will be mandatory with or without notice in this bulletin. The student is responsible for securing the application for certification and submitting the necessary documents and fees to the Florida Department of Education to obtain certification and endorsement. The DOE Certification Ombudsman in the School of Education and Human Development is available to assist with certification and re-certification matters.

ACADEMIC POLICIES

ADMISSION

SELECTION FOR THE TEACHING PROFESSION

The faculty of the School of Education and Human Development conceives its ultimate obligation to be to the children, adolescents, and adults who will be taught by teachers who have completed teacher preparation programs at the University. The quality of students admitted into the teacher education curriculum is as important as the skills, content, and concepts to be learned.

Most courses in the teacher education program require school site-based field experiences, culminating in a full-time 15-week internship. School districts require a criminal background check for field placement students and interns. Fingerprinting and FBI background check procedures are at the applicant’s expense. Students with felony arrests may wish to consider these requirements carefully and, if necessary, seek advice from an advisor in the School before applying for admission to the program. Students without a valid social security number will not be eligible for placement in the school district. The Director of Clinical Supervision and Internship Placement will assist students through these requirements.

All students who wish to be considered for admission and/or retention in curricula leading to Florida Teacher Certification will be formally screened at certain points in their program of study with respect to the following criteria:

1. Admission to Teacher Candidacy (see requirements below).
2. Acceptable grade point averages (C or better for courses in the major).
3. Acceptable evaluations by University of Miami faculty.
4. Evaluations by clinical faculty at various field experience sites.
5. Satisfactory progress toward the completion of the Florida Educators Accomplished Practices requirement.

Students who receive a grade below “C” in their Student Teaching semester will not be recommended for teacher certification.

Note: The Associate Dean of the School of Education and Human Development must approve appeals to the above policies.
REQUIREMENTS FOR ADMISSION TO TEACHER CANDIDACY

2. Completion of 45 semester hours. In addition, transfer students must have a minimum of 9 semester hours of acceptable credit earned at the University of Miami.
3. A 2.5 GPA in education core courses. No education classes lower than “C”.
4. A 2.5 GPA in the content area teaching major (for secondary education majors).
5. Completion of the Course Advisement Plan (CAP).
6. Completion of at least one Field Experience requirement.
7. Further enrollment in teacher education course work offered by the School of Education and Human Development is contingent upon the student meeting requirements 1-6 above.
8. All students must successfully complete M-DCPS fingerprinting process. Forms are available in the Office of Undergraduate Academic Services.

NOTE: Appeals to the policies stated 1-6 above must be directed to the Associate Dean of the School of Education and Human Development.

REQUIREMENTS FOR ADMISSION TO STUDENT TEACHING

Students submit a formal application to the Office of Teacher Preparation Programs and Accreditation for admission to Student Teaching. Application materials are available and are to be completed by students no later than October 15 (Fall semester) or March 15 (Spring semester).

The following requirements must be met:

1. Admission to a Teacher Preparation Program (Teacher Candidacy).
2. Completion of application for admission to Student Teaching, which includes an electronic submission to the Office of Teacher Preparation Programs and Accreditation.
3. Approval of the Associate Dean for Undergraduate Studies, the TAL Department Chair, and the Director of Accreditation.
4. Recommendations from two members of the faculty familiar with the student’s academic proficiency. One of these must be from a faculty member in the School of Education and Human Development.
5. Earned a minimum of 90 credit hours.
6. Submission of two FEAPs via Live Text to the Director of Accreditation.
7. All secondary majors must have completed approximately two-thirds of the courses in the teaching major and received departmental approval. Elementary majors must have completed TAL 308, 320, 322, 323, 330, 332, 420, 421, 432, 434, 423, 426, 428, and received departmental approval.
8. Earned a minimum of 2.5 grade point average in core courses offered by the School of Education and Human Development.
9. A grade of “C” or better is required of each course applied to the major.
10. Earned a minimum of a 2.5 grade point average overall.
11. Successfully completed pre-internship field experiences.
12. Demonstrate satisfactory progress towards the completion of the Florida Educators Accomplished Practices requirement.
13. Passed the Florida General Knowledge Test.
14. Taken the Professional Education Test and the Subject Area Exam. NOTE: A MAXIMUM OF 12 CREDITS MAY BE TAKEN DURING THE STUDENT TEACHING SEMESTER. No outside job may be held or additional classes taken during the Associate Teaching semester. NOTE: The Associate Dean of the School of Education and Human Development must approve appeals to the above policies.
REQUIREMENTS FOR GRADUATION
BACHELOR OF SCIENCE IN EDUCATION

I. Candidates for B.S.Ed. in the School of Education and Human Development must complete the credit hours of work and achieve the quality point average specified for students in the University at large as stated in the section ACADEMIC REGULATIONS AND PROCEDURES, subject to regulations concerning the major specified in departmental and program sections of this Bulletin.

Exempted is interpreted to refer exclusively to those exemptions provided under the following headings:

A. Advanced Standing and Placement (Credit Granted);
B. Credit by Examination;
C. Advanced Placement (by proficiency examination);
D. Statement of Foreign Language Requirements;

II. Students must pass the Professional Education, General Knowledge and Subject Area tests of the Florida Teacher Certification Examination (FTCE).

III. Students must complete the Florida Educator Accomplished Practices (FEAPs) and the P-12 Student Impact requirements. Monitoring of FEAPs and progress made toward program completion in the Teacher Education program will occur at the following checkpoints: Students enrolled in all teacher-education programs will submit complete portfolios at (1) application to student teaching and (2) at the end of TAL 480/TAL 580. In addition, students enrolled in:

• Elementary education will submit a portfolio artifact through LiveText during (or at the latest) upon completion of TAL 421 and TAL 426;
• Secondary education will submit a portfolio artifact through LiveText during or (at the latest) upon completion of TAL 540; and,
• Music education will submit a portfolio artifact through LiveText during or (at the latest) upon completion of TAL 506.

IV. Except where a required course is one designated to correct a deficiency in his/her college preparation, the student may apply the credit hours of any required course from which he is exempted toward the hours specified for that subject as a general requirement for graduation and, upon payment of a recording fee, toward the 120 credits required for graduation. (See Departmental Proficiency Examinations.) An exemption may be granted for English 105, but these credits may not be applied toward the 120 credits required for graduation.

V. Credit Only

Only free electives may be taken under this option. Courses which satisfy the major, minor, the distributions of the School, the General Education Requirements of the University or any course for which a C or better is required may not be taken for credit only.

VI. Transferred credit may not count toward the completion of a major without the written approval of the Associate Dean of the School of Education and Human Development.
VII. Required Areas of Study

A. English Composition 3 – 6 credits

Students fulfill this requirement by satisfactorily completing English 105 and English 106 or its equivalent. Appropriate Advanced Placement (AP) or International Baccalaureate (IB) scores in English composition may be used to satisfy the English 105/106 requirement. An appropriate score on the SAT or ACT verbal examination may earn a student exemption from, but not credit in, ENG 105.

Appropriate scores on other tests determined by the Department of English may earn a student exemption from, but not credit in, English 105. Courses satisfying the English Composition requirement may not be used to fulfill the Writing Across the Curriculum Required Area of Study.

B. Mathematics

B.S.Ed. degree candidates must complete MTH 113 or higher. Students who do not place directly into MTH 113 must enroll in either MTH 099 or MTH 101 based on results of placement tests.

C. Foreign Languages (not applicable)

Areas of Knowledge

D. People and Society

B.S.Ed. Degree candidates must earn 9 credits in the Social Sciences.

E. Arts and Humanities

B.S.Ed. degree candidates must earn 12 credits, which must be earned in the areas of 1) Fine Arts and 2) Humanities with a minimum of 3 credits in each area. All Humanities credits must be earned in courses from the areas of Literature or Philosophy/Religion.

Note: TAL 203: Children’s Literature will fulfill a Literature requirement. TAL 324: Education and the Arts will fulfill a Fine Arts requirement.

F. Natural World

B.S.Ed. degree candidates may fulfill the Natural Sciences requirement by taking 6 credits (credits required depends on the program the student is enrolled) in the following disciplines: Biology, Chemistry, Geological Sciences, Marine Sciences, Physics, and Physical Sciences.

Note: No more than six credit hours may be taken in any one department to satisfy the areas of knowledge requirement.

VIII. Writing

Every student must complete five writing-oriented (W) courses beyond ENG 105 and 106. Students must take one approved writing course section per academic year for a minimum of five writing intensive course sections, or their equivalents. A student is required to write
at least 4000 words in each W course. Writing assignments will be assessed for both content and style. A W course listed in section V (Required Areas of Study) may be used to satisfy both the writing and Required Areas of Study criteria. Foreign language courses that meet the criteria above may be used to satisfy the writing requirement. Transfer students must satisfy at least 3 courses of the writing requirement at the University of Miami.

IX. Majors

Every candidate for the B.S.Ed. degree in the Department of Teaching and Learning must choose a major in Elementary Education/ESOL endorsement with an Exceptional Student Education area of specialization.

X. Minors

Every candidate for a 17-18-credit minor that fulfills the State of Florida’s Professional Training Option (PTO) must select, at the point of application to candidacy, a minor area of study: Secondary English, Secondary Mathematics, Secondary Science, or Secondary Social Studies, Exceptional Student Education or other areas of recognized certification.

XI. Electives

Electives may be chosen from any courses offered by the University. The student should consult an advisor before selecting elective courses. At least six credits must be at the 300 level or above.

Note: Common prerequisites and total length for state-approved teacher education programs are subject to revision based on legislative and State of Florida Department of Education rule changes.

XII. Seniors are required to participate in the General Education Assessment prior to graduation as a part of the SACS review process.

For Graduate Coursework and Graduate Degree Programs Offered by The School of Education and Human Development, see the Bulletin of the Graduate School.

For further information, address all inquiries to: Dean; School of Education and Human Development; P. O. Box 248065; University of Miami; Coral Gables, Florida 33124; Telephone: (305) 284-3711

TEACHER PREPARATION PROGRAM

One of the roles of the School of Education and Human Development is to serve as the professional school to conduct and coordinate programs for the preparation of teachers and other educational personnel at the University of Miami. Membership is held in the American Association of Colleges for Teacher Education, the National Association of State Directors of Teacher Education & Certification and in the Florida Association of Colleges for Teacher Educators. Teacher Preparation Programs (TPP) are accredited by the Florida Department of Education for the preparation of elementary teachers, secondary teachers, music teachers and other school service personnel.

LICENSURE/CERTIFICATION INFORMATION

Only students who have completed all requirements for any State approved degree or certificate program will have their transcripts stamped as meeting State approved
requirements for certification as well as appropriate endorsements. Students must meet requirements of the School of Education and Human Development as well as the college or school issuing the second major. Evidence of successful completion of all twelve Florida Educator Accomplished Practices is required to receive the FLDOE stamp on the graduate’s final transcript. Students entering the program on or after Fall 2012 will be required to evidence successful completion of all six Florida Educator Accomplished Practices. Transcript stamp is contingent upon the student taking at least half of the coursework in teacher education at the University of Miami, including the Associate Teaching component. At least half of the coursework in the students teaching content area(s) must be taken at the University of Miami in the School of Education and Human Development, School of Music, or other UM schools or colleges as determined by the program in which the student is enrolled.

For Graduate Degree Programs offered by the School of Education and Human Development, see the Bulletin of the Graduate School.

For further information, address all inquiries to: Dean; School of Education and Human Development; P.O. Box 248065; University of Miami; Coral Gables, Florida 33124; Telephone: (305) 284-3711

Teaching and Learning Course Listing
MISSION

The College of Engineering is committed to educating tomorrow’s technology leaders for career success.

The objective of the College of Engineering is to serve society by offering high quality educational programs in the professional areas that it covers, and by performing research and community service, with high professional standards. The College is dedicated to educating engineers to deal with the major issues of society over the next generation - enhancing competitiveness, advancing health care, coming into harmony with the environment, utilizing technology for humankind's benefit, and supporting a sophisticated infrastructure. The goal of the faculty is to prepare students to be employed effectively in manufacturing, consulting, construction, information technology, service industries, and those related to the medical industry and health care, in roles involving planning, design and implementation at all levels of decision making. Students are broadly prepared in technical, leadership, and management skills. Student development accrues both inside and outside the classroom, with input from faculty, employers, alumni, and other students. They are made acutely aware of environmental and international perspectives. Professional competence in the traditional sense is complemented by a broad capability to function in society. The College places great emphasis on providing students with a learning experience which will enable them to develop productive careers while creating engineering solutions to problems of our society. Learning is centered around real life experiences, which involve an understanding of science, mathematics, social values, and aesthetics, to produce economical solutions to physical problems which society encounters. Protection and enhancement of the environment is stressed at all levels, and emphasis is placed on the creative application of knowledge which will improve the quality of life.

DEPARTMENT AND PROGRAMS

The College of Engineering has five departments - Biomedical Engineering, Civil, Architectural, and Environmental Engineering, Electrical and Computer Engineering, Industrial Engineering, and Mechanical and Aerospace Engineering - offering curricula leading to Bachelor of Science degrees in the following fields: Aerospace Engineering, Architectural Engineering; Biomedical Engineering; Civil Engineering; Computer Engineering; Electrical Engineering; Engineering Science; Environmental Engineering; Industrial Engineering; and Mechanical Engineering.

Interdisciplinary areas of study, areas of specialization within departments, and study in two entirely different areas are available through options, concentrations and dual degree programs.
ACCREDITATION

The programs in Aerospace Engineering, Architectural Engineering, Biomedical Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, Environmental Engineering, Industrial Engineering, and Mechanical Engineering are accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET), 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone: (410) 347-7700. The program in Engineering Science is not accredited.

The College offers graduate programs leading to degrees both in the traditional and interdisciplinary areas of study. Programs leading to the M.S. degree may include specialization in the following areas of study: Architectural Engineering, Biomedical Engineering, Civil Engineering, Electrical and Computer Engineering, Engineering Management, Environmental Engineering, Industrial Engineering, Mechanical Engineering, Medical Informatics, Structural Engineering, Transportation Engineering, and Thermal and Fluid Sciences. A joint M.S.I.E./M.B.A. program and a M.S. program in Management of Technology are offered in conjunction with the School of Business Administration, a M.S. in Environmental Health and Safety in conjunction with the School of Medicine and a M.S. in Occupational Health and Safety in conjunction with the School of Medicine.

Combined BS/MS Program

The College offers a five-year Bachelor of Science and Master of Science BS/MS degree program in Architectural Engineering, Biomedical Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, Environmental Engineering, Industrial Engineering, and Mechanical Engineering. This program is specifically designed for those students who want to pursue their graduate study as they are completing their undergraduate study. The special conditions and processes for the five-year BS/MS Program are as follows:

Requirements:

You must be an undergraduate student in the College of Engineering (CoE). A master’s degree is considered the first professional degree in engineering. The Admission Committee will carefully review academic credentials for admission into our M.S. program. Students should discuss the program and possibility of entering with an academic advisor. Completed applications are due prior to the beginning of the final exams in your junior year.

Application Process:

Get the application form (It is different for US students and International students) from the CoE Office of Research and Graduate Studies, fill it out and then return it to the same office. The application fee is waived for currently enrolled students in the CoE.

Take the GRE Examination before the end of your senior year and attain a combined score of more than 1000 on the Verbal and Quantitative portions.

Financial Implications:

Many financial aid programs, including those offered by the University and the federal and state governments are restricted to coursework required to complete an undergraduate degree. For further information contact the CoE office of Research and Graduate Studies.
Once admitted into BS-MS program:

In your senior year when you have a fulltime undergraduate status, you may take a maximum of twelve (12) graduate credits (a maximum of six (6) credits per semester). In order to register for these classes, you must complete and submit the UM Graduate School "Application for Undergraduate to Take Graduate Course" special form.

During your last one or two semesters, when you are taking graduate course work only, register as a graduate student.

A student wishing to withdraw from the BS/MS Program without the MS degree must complete all the requirements for the BS degree.

To qualify for the MS degree, the student must meet all the pertinent Graduate School requirements, including an acceptable score on the GRE (Graduate Record Examination) and a minimum of 3.0 GPA in the credits applied toward the MS degree.

The student is awarded both the BS and MS degrees at the end of the fifth year when all degree requirements are satisfied.

The Doctor of Philosophy Degree is currently offered in the area of Biomedical Engineering, Civil Engineering, Electrical and Computer Engineering, Ergonomics, Industrial Engineering, and Mechanical Engineering. The Ph.D. programs in Interdepartmental Graduate Studies permit, with approval of the Graduate Council, highly qualified students to pursue a privileged individualized program which cuts across disciplinary lines.

The Bulletin of the Graduate School presents more detailed information on these graduate programs.

The College is primarily housed in the J. Neville McArthur Building. Completed in 1959 and renovated in 1984, this attractive building is the gift of the late J. Neville McArthur, who was a member of the Board of Trustees and a prominent citizen and dairyman. The Engineering Annex is also a gift of the McArthur family. Students in the College of Engineering come from all parts of the United States and from many nations throughout the world, comprising one of the most diverse and cosmopolitan engineering student bodies in the country.

ENGINEERING LABORATORIES
The College of Engineering maintains a variety of well-equipped laboratories adequate for undergraduate instruction and providing for graduate and sponsored research.

COMPUTER LABORATORIES
Clarke Computational Laboratory
Computer Graphics Laboratory

BIOMEDICAL ENGINEERING LABORATORIES
Biomedical Design and Instrumentation Laboratory
Biomaterials/Circulatory Assist Device Laboratory
Biomedical Atomic Force Microscopy Laboratory
Biomedical Optics Laboratory
Diabetes Tissue Engineering Laboratory
Joint Bioengineering and Endourology Laboratory
Measurements Laboratory
Medical Imaging Laboratory
Neuroprosthetics Research Group
Neurosensorial Engineering Laboratory
Stem Cell and Mechanobiology Laboratory
Tissue Biomechanics Laboratory
Tissue Engineering Laboratory

CIVIL, ARCHITECTURAL AND ENVIRONMENTAL ENGINEERING LABORATORIES
Geotechnical Engineering Laboratory
Structural Laboratories
Environmental Engineering Laboratory
Architectural Engineering Laboratory

ELECTRICAL AND COMPUTER ENGINEERING LABORATORIES
Electronics Laboratory
Wireless Communications Laboratory
Digital Signal Processing Laboratory
Electrical Machinery Laboratory
Digital Design Laboratory
Microprocessor Laboratory
Photonics and Micro-Devices Laboratory
Distributed Decision Environments Laboratory
Underwater Imaging Laboratory
Networks Laboratory
Embedded Systems Laboratory
Computer Vision and Image Processing Laboratory
Information Technology Laboratory
Multimedia Laboratory
Digital Audio and Speech Processing Laboratory
Optics and Fiber Communications Laboratory
ECE Computer Laboratory
Nanophotonics and Devices Laboratory
MEMS and VLSI Laboratory

INDUSTRIAL ENGINEERING LABORATORIES
Computer Integrated Manufacturing Laboratory
Industrial Hygiene Laboratory
Biomechanics and Gait Laboratory
Human Factors and Aging Research Laboratory
Productivity Research Laboratory
Work Design Laboratory
Work Physiology Laboratory
Systems and Operations Research Laboratory
Industrial Ventilation Laboratory
Robotics Laboratory

MECHANICAL AND AEROSPACE ENGINEERING LABORATORIES
Aerospace Materials Simulation Laboratory
Aerodynamics and Computational Fluid Dynamics Laboratory
Design and Manufacturing Laboratory
Fuel Cells Laboratory
Thermo-Fluid Mechanics Laboratory
Integrated Nano-Bio-Systems Laboratory
Admission to the College of Engineering is covered under the section on Admission to the University in the General Information section of this Bulletin. Algebra, trigonometry, analytic geometry, chemistry, computer literacy, and physics are high school subjects that are appropriate for students planning on entering the College.

The academic work of each transfer student will be evaluated on an individual basis, and the student will be enrolled in the College at an appropriate level.

Requirements for Graduation

The College believes that emphasis should be placed on the student’s ultimate level of attainment in selected subject areas. For those students whose preparation is advanced beyond that of the average secondary school graduate, the University provides proficiency examinations and schedules the students for more advanced work. Graduation for these students may be accelerated. For those students whose secondary school preparation has not provided an adequate background, the University offers preparatory courses. Graduation for these students may be delayed accordingly.

The student’s program of study is selected jointly with an advisor, with special attention to the individual student’s needs. Flexibility is ordinarily possible within the framework of sound education in the essential fundamentals and within the development of depth in selected fields of design and analysis. An examination of a typical curriculum given under the various department sections of this Bulletin shows that there is a strong common core of studies. Therefore, students uncertain of their ultimate field of specialization retain a high degree of mobility to enable them to transfer from one curriculum to another.

Completion of any of the prescribed curricula, except Engineering Science, with an overall grade point average of at least 2.0 (C) in all course work, to include all accepted work from other institution(s), is the basic requirement for graduation in the College. An average of C
also must be attained in all work attempted at the University of Miami and the professional studies. The Engineering Science curriculum, because of its special purpose, has a higher requirement, i.e., a grade point average of 3.0 (B).

The requirements for graduation as specified by each Department and Program reflect the general education requirements of the University of Miami and the requirements of the appropriate accrediting agencies. The curricula contain required courses and elective courses. No course required for graduation may be taken under the credit-no credit (Credit-Only) option.

Students are expected to make satisfactory progress toward graduation by meeting the criteria established above. Whenever a student fails to demonstrate positive academic progress, he/she may be placed on academic probation or dismissed by the College of Engineering Scholastic Standards and Advising (SSA) Committee.

**General Educational Requirements**

People and Society and Humanities and Arts electives may be taken from a wide variety of courses. A minimum of 18 credits of people and society/humanities and arts electives is required for graduation, with a distribution of a minimum of 6 credits each in the areas of Humanities and Arts and People and Society; the other 6 credits may be taken in either Humanities and Arts or People and Society.

The College of Engineering faculty requires that the courses selected must provide both breadth and depth and not be limited to a selection of unrelated introductory courses. Courses that instill cultural values are acceptable, while written exercises and personal craft are not. Foreign language courses in a student’s native language(s) or that spoken at home are not acceptable. To provide depth, the College of Engineering Faculty requires at least two courses be at the advanced level. An advanced level course is defined as a course with at least one prerequisite or a course at the 300 or 400 levels.

To satisfy the University of Miami general education requirements on writing intensive courses, at least six credits of the People and Society/Humanities and Arts electives must be in writing sections (W) (note: all English and literature courses are considered writing courses). The remainder of the required writing is satisfied by writing within the engineering design and laboratory courses.

**COLLEGE OF ENGINEERING – HUMANITIES AND ARTS - PEOPLE AND SOCIETY ELECTIVES**

Select six courses with at least two courses in HUMANITIES AND ARTS and two in PEOPLE AND SOCIETY.

Two of these six courses must be taken in sections designated as Writing sections (W).

Also at least two of these six courses must be at the advanced level. An advanced level course is defined as a course with at least one prerequisite or a course at the 300 or 400 levels.

**People and Society**

Courses in the following areas may be used to fulfill this requirement: Africana Studies; American Studies (AMS); Anthropology (except APY 203); Economics; Educational
Psychology; Geography and Regional Studies (except GEG 120); International Studies; Judaic Studies; History; Political Sciences; Psychology (except PSY 204); Sociology; Teaching and Learning; Women’s and Gender Studies (WGS), and the following courses: BME 320; CBR 102; COM 101; COM 110; COS 112; COS 118; COS 336; COS 472; FSS 190-199.

Humanities and Arts excluding Talent and Performance Courses

Courses in the following areas may be used to fulfill this requirement: Architecture (Note: A special form must be completed prior to registration in the course ARC 323); Musicology; Art History; English (200-level or above); Modern Languages and Literature (300-level or above); Philosophy (except PHI 210 and PHI 510); Religious Studies; and the following courses: CMP 103, CMP 204, CMP 205, COS 211; DAN 250; FFA, FLT, FPR 190-199.

The following are examples of excluded Talent and Performance Courses:
1. All studio courses: ARTXXX
2. All theater courses: THAXXX
3. All Dance courses other than DAN250: DANXXX
4. All Performance courses: MIPXXX
5. All Keyboard and Vocal courses: MKPXXX and MVPXXX
6. All Music Education courses: MEDXXX
7. All Music Business and Entertainment courses: MMIXXX
8. All Music Theory & Composition courses: MTCXXX
9. All Music and Jazz Instrumental courses: MSJXXX

The student’s official records are maintained by the Office of Enrollment Services. It is the student’s obligation to take the initiative to assure that all requirements are being met in conformity with his/her own graduation plans.

DEGREE PROGRAMS

DUAL MAJORS
Dual majors are offered for engineering students with strong interest in related fields of study such as Physics or Mathematics. In order to obtain a dual major in one of these areas, the student will have to obtain, in parallel, a degree in one of the engineering programs, plus additional course work approved by the dual majors department. Further information on this dual major program may be obtained from the Dean’s Office of the College.

MINORS
Minors are offered by the College of Engineering. The departments of Civil, Architectural, and Environmental Engineering, Electrical and Computer Engineering, Industrial Engineering, and Mechanical Engineering offer minors with various areas of specialization. Details of each area of concentration and its requirements may be found under each departmental listing.

Engineering students can earn a minor offered by any other College/School within the University of Miami, including the College of Engineering. In cases where the major degree requirements satisfy some of the requirements for the minor, at least six credits beyond the
major degree requirements must be taken in the minor subject area to earn a minor. Minors in Engineering require a minimum GPA of 2.0 in the courses required for the minor.

HONORS

Students who show both promise and superior performance may receive academic advantages, certain privileges, and recognition through admission to the Honors Program of the University. Please refer to the HONORS PROGRAMS section, which appears elsewhere in this Bulletin, for information on these programs.

FOOTE FELLOWS IN CoE
The Foote Fellows Program was established in honor of former President Edward T. Foote, II. The Foote Fellows Program is intended for students who enter the University with advanced knowledge in several disciplines, who demonstrate intellectual rigor and who are highly motivated thinkers and researchers. In the College of Engineering this program offers such students the opportunity to explore their academic interests without the strictures of the People and Society and Humanities and Arts distribution requirements unless it is part of their engineering program as well as a broader choice of technical electives in their engineering program.

DEPARTMENTAL HONORS PROGRAM
A student in the College of Engineering may graduate with Departmental Honors noted upon his/her diploma and transcript upon fulfillment of the following requirements:

A. Completion of at least 18 credits of course work in honors courses and/or in courses at the 500 level, including 6 credits in independent study, senior thesis, or designated advanced or special honors courses specified by the department, with grades of at least B in these 6 credits.

B. Attainment of at least a 3.4 overall grade point average. Transfer students must also attain at least a 3.4 grade point average in all work taken at the University of Miami.

C. Attainment of at least a 3.5 average in the departmental major courses.

D. A written request from the student to the departmental faculty during his/her semester of expected graduation stating the desire to graduate with Departmental Honors, and specifying those courses taken in compliance with section (A) above.

CERTIFICATE PROGRAMS IN ENGINEERING
In cooperation with the University’s School of Continuing Studies, the College of Engineering offers practicing engineers advanced or specialized training without having to meet the stringent entrance requirements of the Graduate School. Persons holding Bachelor’s degrees, registered as Professional Engineers, or possessing equivalent qualifications can be granted Certificates of Proficiency by the University after completing fifteen semester-hours of course work in a specified field of engineering. Study programs are arranged on an individual basis by each student and his/her advisor. Detailed information on Certificate Programs can be requested from the Office of the Dean of Engineering.

THE INTERNSHIP COOPERATIVE PROGRAM
The Cooperative Program takes its name from the close cooperation that exists between the College and participating employers. This arrangement attempts to insure that each student’s academic and work experience will integrate and contribute significantly to his/her
overall growth and professional development. Interviews and screening by both the employer and Cooperative Program personnel attempt to match the needs of the employer carefully with the interests and capability of the student.

ADVANTAGES TO THE STUDENT:
1. Offers on-the-job experience to supplement the academic degree program.

2. Offers potential long term career employment with the Cooperative Program employer.

3. The experience obtained makes the student, upon graduation, potentially much more valuable to any future employer. Upon completion of an appropriate amount and level of experience, graduation in the Cooperative Program may be recognized by a special seal on the student’s diploma.

4. Helps the student to verify whether or not his/her career or specialty choice is correct.

5. Tends to increase motivation and to make academic studies more meaningful.

6. Earnings from Cooperative Program employment can cover a significant portion of the student’s college expenses.

7. Certain work experience may shorten the experience requirements, after graduation, for eligibility for professional registration.

8. Helps to develop the students understanding of human relations and the lifelong need of learning to balance appropriately the demands on ones time of multiple duties such as studying, employment, daily necessities, family obligations, etc.

ADVANTAGES TO THE EMPLOYER:
1. Offers an opportunity to recruit and screen potential employees in the fields of engineering.

2. The Cooperative Program maintains an up-to-date roster of available undergraduate and graduate students, many with previous experience. This roster offers employers means of obtaining employees to meet fluctuating work loads, on relatively short notice.

3. Students in the Cooperative Program can provide good company public relations with their classmates.

4. Participation in a Cooperative Program serves the profession by providing opportunities for many capable and well deserving young persons to attend a University, who otherwise might lack the financial ability or motivation to attend.

TYPES OF COOPERATIVE PROGRAM ARRANGEMENTS

CONTINUOUS WORK-STUDY
An arrangement involving a combination of part-time employment (15 or more hours per week) and a credit hour academic load which is appropriately reduced from the normal full-time load to balance the employment duties. Full-time employment may be undertaken during the summer period. Two students may be used during the year to share the hours of a full-time position (20 hours each student). In some instances, an individual student will hold a full-time position and carry a light academic load in evening and/or early morning classes.
ALTERNATING WORK-STUDY
An arrangement involving two students alternating full-time employment and full-time study. Students alternate positions of work and study at the end of each semester (including the summer), and thereby provide the equivalent employee time of a full-time position year-round.

STUDENT ELIGIBILITY FOR THE PROGRAM
University of Miami students enrolled in the College of Engineering are eligible to enter the Cooperative Program. Initial entry into the Program is limited to superior students. Normally, work assignments are not given until the equivalent of one or two semesters of full-time academic work is completed. Currently, most students in the Program are under continuous work-study arrangements.

STUDY ABROAD PROGRAMS
The College of Engineering encourages its students to take advantage of one of the University of Miami’s numerous study abroad options in Latin America, Europe, Asia, Australia and the Middle East. Of particular interest to Engineering students are the following: internships (unpaid and paid) in Spain, England, France, Argentina, Colombia, Chile, and Australia in which professional work experience is carried out abroad; course work at Engineering schools abroad for a semester or an academic year; summer programs in intensive Language instruction, Humanities and Social Sciences abroad. The cost of attending these programs is equivalent to University of Miami tuition and fees. Almost all University of Miami financial aid is granted. With prior approval and detailed curriculum advice, courses taken abroad will apply towards graduation.

THE MANAGEMENT OF TECHNOLOGY SUPPLEMENTAL PROGRAM
The objective of this program is to educate engineers in how to exploit their technological knowledge. This is a vital, but often neglected, link in achieving competitiveness in the global marketplace. The basic premise motivating this approach is the recognition that in today’s world, technology is the backbone of the business enterprise system and that wealth can only be created through production of goods and services. This program will educate engineers in a multitude of subjects bridging the gap between product technology, production technology and the marketplace, which is the ultimate customer of engineering contributions.

The program consists of four courses:
1. Quality in Design of Products and Production Systems
2. Entrepreneurship for Engineers
3. Production Systems Design

A project is required at the end of the program, but is threaded throughout the program starting with the first course. Upon completion of the program, the student will receive a special certificate of completion. This program is available to all qualified students in all departments of the College of Engineering.

Admission to the Program
Admission to this supplemental program will be by application submitted by the candidate or by nomination by an advisor or department chair. All applications will be reviewed by a standing committee. Students must meet the prerequisite of each course before enrolling in it.
Requirements for the Certificate
The program is an add-on to existing curriculum. Students must complete all courses designated in order to qualify for the certificate. A notation will be made on the student’s transcript recognizing their completion of the special program. No designation will be made on the diploma.

Course Sequence
Courses are recommended to be taken in the sequence indicated above.

Team Work
Students will be encouraged to work on projects in teams. Multidisciplinary teams will also be encouraged.
INTRODUCTION

Biomedical engineering is a multidisciplinary field at the interface of traditional engineering disciplines and biological sciences. Biomedical engineers apply engineering principles and techniques to solve problems in medicine and biology. Applications include the design of medical devices, implants and prostheses, the development of new biomaterials or drug delivery systems, cellular or tissue engineering, medical applications of optics and lasers, or the acquisition and interpretation of physiological signals and medical images for diagnostic and monitoring purposes. Biomedical engineering has an impact on virtually all fields of medicine.

The Department of Biomedical Engineering at the University of Miami was formally established in 1979, as a graduate program. The four-year undergraduate program leading to the B.S. degree in BME was created approximately ten years later to address the growing importance of the field and the need for professional biomedical engineers. The undergraduate BME program at the University of Miami was the first of its kind in Florida, with the first class of B.S.B.E. students graduating in 1993. It has been Accredited by the Accreditation Commission (EAC) of the Accreditation Board of Engineering and Technology (ABET) since 1997. The Department of Biomedical Engineering also offers graduate courses leading to the Master of Science and Doctor of Philosophy degrees. In addition, qualified undergraduate students may apply for the combined BS/MS program (details are provided following the curricula for the BS degrees).

Graduates of the biomedical engineering undergraduate program find employment in industry or continue their studies either in graduate school or in a professional school in medicine and other health-related disciplines (such as dentistry, optometry, orthotics), law or business.

Some special features of the program include the small class size and open-door policy of the faculty, which facilitates student-faculty interaction. The Department has very strong ties with the University of Miami Miller School of Medicine. Undergraduate students have a wide range of research and internship opportunities in some of the leading research laboratories in their respective field. The Department strongly encourages undergraduate student participation in research and professional activities.

MISSION STATEMENT

The mission of the biomedical engineering program is to prepare students to become skilled engineers with an understanding of the ethical and other professional aspects of biomedical engineering. Design skills and an ability to work both independently and as part of a team are emphasized.
EDUCATIONAL OBJECTIVES

The educational objectives of the biomedical engineering program at the University of Miami are to graduate engineers who:
1. have a sound background in the fundamentals of engineering, physical and life sciences, and are prepared to solve problems at the interface of engineering and life sciences.
2. have mastered the skills and knowledge expected by the biomedical industry.
3. are prepared to enter graduate and professional degree programs, as well as other careers.

PROGRAM DESCRIPTION

Curriculum: The three educational objectives of the Biomedical Engineering program are achieved via the implementation of a curriculum with four parallel concentrations which include a common core and concentration-specific courses. The core curriculum is designed to provide a broad foundation in the basic sciences and in engineering. Concentration-specific courses provide the depth required to be proficient engineers.

The four concentrations are Electrical (E), Mechanical (M), Biomaterials and Tissue (B) and Premedical (P). The Premed concentration satisfies the requirements for admission to medical school and provides depth in the area of biomaterials and tissue engineering. The curriculum is designed to provide all graduates with the analytical and design skills required to formulate and solve problems at the interface of engineering and life sciences. Outstanding students are prepared for graduate studies or medical school.

Required courses in the humanities and social sciences provide students with an awareness of social, ethical and environmental issues related to their profession. The curriculum has been carefully designed with the prerequisite structure in mind so that students have to draw from previously acquired knowledge to complete the upper level course requirements successfully. The curriculum includes two or three technical electives selected by the student based on their individual professional interests.

The curriculum places a special emphasis on written and oral communication skills. Many of the Biomedical Engineering courses, as well as the capstone design project, include a requirement for a written term paper and oral presentation on a course-related topic related to the class.

Design experience: The biomedical engineering design experience is integrated in the curriculum throughout the four years of study, starting in the freshman year with the Introduction to Biomedical Engineering course. Each semester includes classroom or laboratory courses which place a heavy emphasis on theoretical and practical biomedical engineering design concepts. The design experience culminates in the senior year with a year-long capstone Senior Design Project. The Senior Design Project is typically completed by teams of two students who build on their knowledge and previous design experience to solve one major design problem which integrates the various components of the curriculum. The senior project starts in the second semester of the junior year with a 1-credit course which covers the basic principles of biomedical engineering design.

The curriculum includes a Technical Entrepreneurship course which can serve as an alternative to the Senior Design Project. The students form entrepreneurial teams of 4 to 6 members to design and develop new products, including a business or commercialization
plan. This course was established with a grant from the National Collegiate Innovators and Inventors Alliance (NCIIA) in 1999 and it is currently supported by additional grants from NCIIA.

**Teaching and design laboratories:** Biomedical Engineering students have open access to several teaching laboratories which are used for the laboratory courses and design projects. The laboratory equipment and instructional modules are geared towards instruction in the areas of tissue mechanics, instrumentation, measurements, biomedical optics, physiological signals, among others.

**Undergraduate research and internships:** Biomedical Engineering students are strongly encouraged to gain research or professional experience through internships. Many undergraduate students conduct research in laboratories at the Department of Biomedical Engineering and at the School of Medicine, or are hired as interns by the local biomedical industry.

**DEGREE PROGRAMS**

The department offers one degree program with four concentrations: Electrical, Mechanical, Biomaterials and Tissue, and Premed. The Premed Concentration prepares graduates for admission to medical school and provides depth in the area of biomaterials and tissue engineering. A tabular listing of the course requirements for the degree Bachelor of Science in Biomedical Engineering is included below for each concentration.
## BACHELOR OF SCIENCE IN BIOMEDICAL ENGINEERING

### Electrical Concentration (133 credits)

### FRESHMAN YEAR

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<td>BME 470 Biomedical Signal Analysis</td>
<td>BME 401 Senior Project</td>
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<td>EEN 304 Logic Design</td>
<td>BME 440 Biomedical Measurements</td>
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<td>EEN 305 Electronics I</td>
<td>EEN 315 Digital Design Laboratory</td>
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<td>BME 450 Biomedical Transport Phenomena</td>
<td>BME 540 Computer Based medical Instrumentation</td>
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<td>BME 480 Biomedical Instrumentation</td>
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<td>BME 507 LabView Applications for Biomedical Engineering</td>
<td>BME 570 Biomedical Signal Processing</td>
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### BACHELOR OF SCIENCE IN BIOMEDICAL ENGINEERING

**Mechanical Concentration (133 credits)**

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BACHELOR OF SCIENCE IN BIOMEDICAL ENGINEERING  
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<tr>
<td>BME 402 Senior Project II</td>
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<td>BME 565 Tissue Engineering</td>
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<td>BME 566 Cell and Tissue Engineering Lab</td>
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* To be selected from lists of approved People and Society (PS)/Humanities and Arts (HA) electives found in this Bulletin in the College of Engineering section.

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# BACHELOR OF SCIENCE IN BIOMEDICAL ENGINEERING
 Premed Concentration (133 credits)

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<thead>
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<th>FRESHMAN YEAR</th>
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<td><strong>Fall Semester</strong></td>
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<td>BME 111 Introduction to Engineering I</td>
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<td>ENG 105 English Composition I</td>
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<td>BIL 160 Evolution &amp; Biodiversity</td>
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<td>CHM 265 Medical Systems Physiology</td>
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<td>BME 310 Mathematical Analysis in Biomedical Engineering</td>
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<td>PHY 209 University Physics Lab III</td>
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<td>BME 450 Biomedical Transport Phenomena</td>
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</table>

* To be selected from lists of approved People and Society (PS)/Humanities and Arts (HA) electives found in this Bulletin in the College of Engineering section.

** Technical Electives are chosen from the BME course offerings (300 level and above) with the approval of the advisor. Any other courses selected need to be approved by the advisor and the chairperson.

*** Advanced Bioscience Elective is to be chosen from BMB260, BIL250, BIL255, BIL268 or MIC301.

**** Technical Elective Lab is selected from BME506, BME507, BME566 or BME395.
BACHELOR OF SCIENCE IN BIOMEDICAL ENGINEERING
(Any of the three Concentrations) AND
MASTER OF SCIENCE IN BIOMEDICAL ENGINEERING

- Juniors from any of the three BME Concentrations who have maintained at least a 3.0 CGPA have the option to apply for admission to the combined BS-MS in Biomedical Engineering program.
- Those who are accepted into this accelerated program must maintain at least a 3.0 CGPA and a minimum of a 3.0 GPA for the final 30 credits to meet the requirements of the Graduate School.
- The participants are excused from BME 401/402/403 Senior Design I, II and III, but are required to complete BME 605/606 Master Design Project I and II.
- If a student needs to withdraw from the BS/MS BME program then all the requirements for the specific BS BME Concentration must be completed for graduation with the BS BME degree.
- The first four years of the curriculum are altered only by the elimination of the 6 credits for BME 401/BME402/BME403. Instead, one 3 credit Technical Elective is added in the first semester of the senior year and one 3 credit Technical Elective is added in the second semester of the senior year.
- Six credits of Technical electives earned during the fourth year are counted toward the 30 credits required for the MS degree.
- The curriculum for the fifth year is shown below.

<table>
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<th>FIFTH YEAR</th>
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<tr>
<td><strong>Fall Semester</strong></td>
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<td>Technical Elective*</td>
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<td>12</td>
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</tbody>
</table>

* Technical Electives are chosen from the BME course offerings (500 level and above) with the approval of the advisor.

DUAL MAJOR

The College of Engineering offers a dual major in Biomedical Engineering. In order to obtain the dual major in Biomedical Engineering, the student will have to obtain, in parallel, a major in one of the fundamental engineering programs, plus 24 credit-hours of course work, including 18 credits of required course work and 6 credits of elective course work from the lists given below. Of this total of 24 credits, at least 12 have to be at the level of 400 and above.

The required courses for the dual major are:

- BME 335. Biomaterials I 3 credits
- BME 375. Foundations of Biomechanics 3 credits
- BME 440. Biomedical Measurements 4 credits
- BME 480. Biomedical Instrumentation 3 credits
- BME 501. Unified Medical Sciences 3 credits
- BME 502. Unified Medical Sciences II 3 credits

The electives are to be chosen from the BME course list.
DEPARTMENTAL HONORS

Upon request departmental honor is noted in a student’s diploma and transcript upon fulfillment of the requirements specified in the College Bulletin.

Biomedical Engineering Course Listing
CIVIL, ARCHITECTURAL, AND ENVIRONMENTAL ENGINEERING
Dept. Code: CAE
http://www.cae.miami.edu

MISSION STATEMENT

The mission of the Department of Civil, Architectural, and Environmental Engineering is to:

- Provide high-quality undergraduate and graduate education in civil, architectural, and environmental engineering that will prepare graduates for professional careers and a lifetime of learning
- Conduct high-quality research that will advance the body of knowledge and improve the quality of human life
- Serve the engineering profession and society through active involvement in professional organizations and contribution of professional expertise

The department offers three undergraduate degrees: Bachelor of Science in Civil Engineering, Bachelor of Science in Architectural Engineering and Bachelor of Science in Environmental Engineering.

CIVIL ENGINEERING
Civil engineers are leaders in the planning, design, construction, and operation of systems that are essential to modern life. These systems include: buildings, highways, airports, pipelines, bridges, dams, irrigation systems, drainage systems, water-supply and distribution systems, and wastewater collection and treatment works. Civil engineers are employed by government agencies, public utility companies, private consulting firms, construction companies, architectural firms, and universities.

ARCHITECTURAL ENGINEERING
Architectural engineers are leaders in the planning, design, construction, and operation of engineered systems for commercial, industrial, and institutional buildings and other facilities. These engineered systems include electrical, communications and control, lighting, heating, ventilating, air conditioning, fire protection, plumbing, acoustic, and structural components. Architectural engineers are employed by consulting firms, construction companies, architectural firms, government agencies, and universities.

ENVIRONMENTAL ENGINEERING
Environmental engineers are leaders in the application of engineering principles to improve and maintain the environment for the protection of human health, for the protection of nature’s beneficial ecosystems, and for environment-related enhancement of the quality of human life. Environmental engineers are employed by government agencies, consulting firms, and universities.
EDUCATIONAL OBJECTIVES

The objectives of the Civil Engineering Program are to have graduates who within the first several years following graduation are either

1. Working as a professional in an area closely related to civil engineering or
2. Pursuing a graduate or professional degree.

The objectives of the Architectural Engineering Program are to have graduates who within the first several years following graduation are either

1. Working as a professional in an area closely related to architectural engineering or
2. Pursuing a graduate or professional degree.

The objectives of the Environmental Engineering Program are to have graduates who within the first several years following graduation are either

1. Working as a professional in an area closely related to the water environment or
2. Pursuing a graduate or professional degree.

DEGREE PROGRAMS

Civil Engineering Curriculum

The Civil Engineering curriculum provides an integrated educational experience in mathematics, basic sciences, humanities, social sciences, engineering sciences, and civil engineering design. The first two years of the Civil Engineering curriculum provide a strong foundation in mathematics, basic sciences, and engineering sciences. During the next two years of the four-year program, the Civil Engineering curriculum integrates engineering sciences with design applications in the areas of structural, environmental, geotechnical, and water resources engineering. The curriculum culminates with a major senior-level design project that includes design applications from the major specialty areas of civil engineering.

Graduate study is offered leading to the degrees Master of Science and Doctor of Philosophy in Civil Engineering. For detailed information on graduate studies, see the Graduate Studies Bulletin.

A tabular listing of the course requirements for the degree of Bachelor of Science in Civil Engineering is shown below:
## Architectural Engineering Curriculum

The Architectural Engineering curriculum provides an integrated educational experience in mathematics, basic sciences, humanities, social sciences, engineering sciences, and architectural engineering design. The Architectural Engineering program integrates design applications across the curriculum, beginning with building construction and architectural design in the sophomore year, and continuing with structural, building mechanical and electrical systems design, and construction management in the junior and senior years. The curriculum culminates with a major comprehensive design experience that includes applications from the major specialty areas of architectural engineering.

Graduate study is offered leading to the degree of Master of Science in Architectural Engineering. For detailed information on graduate studies, see the Graduate Studies Bulletin.
A tabular listing of the course requirements for the degree of Bachelor of Science in Architectural Engineering is shown below:

### Architectural Engineering

#### Freshman Year:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CAE 111</td>
<td>Introduction to Engineering I</td>
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<td>ENG 105</td>
<td>English Composition I</td>
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<tr>
<td>MTH 151</td>
<td>Calculus I for Engineers</td>
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<tr>
<td>PHY 205</td>
<td>University Physics I</td>
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<tr>
<td>CAE 112</td>
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<td>ENG 107</td>
<td>Writing About Science</td>
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<tr>
<td>MTH 162</td>
<td>Calculus II</td>
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<td>PHY 206</td>
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<tr>
<td>CAE 210</td>
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**Total** 14

#### Sophomore Year:

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<td>CAE 212</td>
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<tr>
<td>ARC 294*</td>
<td>Bldg. Tech. I: Materials &amp; Methods</td>
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<tr>
<td>ARC 294*</td>
<td>Intro. to Develop. of Architecture</td>
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<tr>
<td>MTH 211</td>
<td>Calculus III</td>
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<td>CAE 310*</td>
<td>Structural Analysis</td>
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<td>Introduction to Architecture Design I</td>
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<td>Chemistry for Engineers</td>
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<td>19th and 20th Century Architecture</td>
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<td>CAE 381*</td>
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<tr>
<td>MAE 303</td>
<td>Thermodynamics I</td>
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<td>Electrical &amp; Illum. Sys for Bldgs.</td>
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<td>ARC 371*</td>
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<td>ARC 370*</td>
<td>Geotechnical Engineering I</td>
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<td>ARC 371*</td>
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**Total** 17

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<td>Thermodynamics II</td>
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<td>ARC 371*</td>
<td>Electrical &amp; Illum. Sys for Bldgs.</td>
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<tr>
<td>ARC 370*</td>
<td>Mechanical Systems for Buildings</td>
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<tr>
<td>ARC 370*</td>
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<td>Technical Elective</td>
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<tr>
<td>CAE 321*</td>
<td>Steel Structures</td>
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<td>Geotechnical Engineering I</td>
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<td>CAE 371*</td>
<td>Geotechnical Laboratory</td>
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<td>CAE 303</td>
<td>Structural Mechanics</td>
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**Total** 18

#### Senior Year:

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<td>Construction Management</td>
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<tr>
<td>CAE 480*</td>
<td>Design of Environ. Sys for Bldgs.</td>
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<tr>
<td>CAE 490*</td>
<td>Found. Eng. &amp; Earth Retaining Sys</td>
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<tr>
<td>ARC 517*</td>
<td>Construction Documents</td>
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<td>People and Society Elective</td>
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<tr>
<td>Advanced PS/HA Elective*</td>
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<tr>
<td>CAE 402</td>
<td>Professional Engineering Practice</td>
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<td>CAE 460*</td>
<td>Construction Management</td>
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<tr>
<td>CAE 490*</td>
<td>GIS in Urban Design</td>
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<td>People and Society Elective</td>
<td></td>
<td>3</td>
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<tr>
<td>AEN Design Elective*</td>
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<tr>
<td>AEN Design Elective*</td>
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</table>

**Total** 16

$ Only offered once a year; * CAE 520 or CAE 521; ** To be selected from lists of approved People and Society (PS)/Humanities and Arts (HA), Technical and Design electives.

### Environmental Engineering Curriculum

The Environmental Engineering curriculum provides an integrated educational experience in mathematics, basic sciences, humanities, social sciences, engineering sciences, and environmental engineering design. The first two years of the Environmental Engineering curriculum provide a strong foundation in mathematics, basic sciences, and engineering sciences. The next two years of the four-year program, integrate engineering sciences with design applications with particular emphasis in the areas of water and wastewater engineering.
Design courses emphasize an integrated approach that considers all environmental media in the prevention and control of environmental problems. The curriculum culminates with a major senior-level design project that includes design applications from the major specialty areas of environmental engineering.

A tabular listing of the course requirements for the degree of Bachelor of Science in Environmental Engineering is shown below:

<table>
<thead>
<tr>
<th>Freshman Year</th>
<th></th>
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<tbody>
<tr>
<td>CAE 111*</td>
<td>Introduction to Engineering I</td>
<td>3</td>
<td>CAE 112*</td>
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<tr>
<td>ENG 105</td>
<td>English Composition I</td>
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<td>ENG 107</td>
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<td>MTH 151</td>
<td>Calculus I for Engineers</td>
<td>5</td>
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<td>PHY 205</td>
<td>University Physics I</td>
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<td>PHY 206</td>
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<td>People and Society Elective*</td>
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<td></td>
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<tbody>
<tr>
<td>CAE 210</td>
<td>Mechanics of Solids I</td>
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</tr>
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<td>University Physics III Lab</td>
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<td>CHM 112</td>
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<td>MTH 211</td>
<td>Calculus III</td>
<td>3</td>
<td>CHM 114</td>
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<td>CHM 111</td>
<td>Principles of Chemistry I</td>
<td>3</td>
<td>MTH 311</td>
</tr>
<tr>
<td>CHM 113</td>
<td>Chemistry Laboratory I</td>
<td>1</td>
<td>Biology Elective*</td>
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<tr>
<td>IEN 311</td>
<td>Applied Probability and Statistics</td>
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<table>
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<tr>
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<tbody>
<tr>
<td>CAE 330</td>
<td>Fluid Mechanics</td>
<td>3</td>
<td>CAE 430*</td>
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<tr>
<td>CAE 340*</td>
<td>Intro. to Environmental Eng.g</td>
<td>3</td>
<td>CAE 440*</td>
</tr>
<tr>
<td>MAE 303</td>
<td>Thermodynamics I</td>
<td>3</td>
<td>CAE 345*</td>
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<td>MSC 111</td>
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<td>Environmental Eng. Course**</td>
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<td></td>
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<tbody>
<tr>
<td>Environmental Eng. Course**</td>
<td></td>
<td></td>
<td>CAE 402</td>
</tr>
<tr>
<td>CAE 403*</td>
<td>Senior Design Project I</td>
<td>1</td>
<td>Environmental Eng. Course**</td>
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<tr>
<td>CAE 530*</td>
<td>Water-Resources Engineering II</td>
<td>3</td>
<td>CAE 404*</td>
</tr>
<tr>
<td>RSMAS Course</td>
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<td></td>
<td>RSMAS Course</td>
</tr>
<tr>
<td>Advanced PS/HA Elective*</td>
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<td><strong>Total</strong></td>
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<td></td>
<td><strong>Total</strong></td>
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</table>

$ Only offered once a year; * Co-requisite CAE 212 not required for EnE majors
* To be selected from approved lists of People and Society (PS)/Humanities and Arts (HA)/Biology Electives; ** CAE540, CAE 533 and CAE 542 offered on a 3-semester rotation. Students must take these three courses

Note: students must select the RSMAS course from the list of required (non-elective) courses in either the Ocean Engineering Track or the Marine Policy Track. A minor in Marine Science will be awarded for 15 credits of MSC, AMP or other RSMAS courses provided these include MSC 111, MSC 301 and at least 6 credits at the 300 level or higher. Required courses in the track count towards the 6 credits at the 300 level.

**RSMAS Track 1: Ocean Engineering**
AMP402 (Introduction to Ocean Engineering)
AMP509 (Coastal Physics & Engineering)
One 3-credit elective that can be any MSC course or any RSMAS 500-level course
RSMAS Track 2: Marine Policy*
MSC340 (Ocean Policy)
MSC313 (Coastal Law)
MSC314 (Ocean Law)
*These courses fulfill the requirements of People and Society electives for General Education

DUAL-DEGREE PROGRAMS

A dual degree program is available leading to a degree in Bachelor of Science in Environmental Engineering and a Bachelor of Science from the College of Arts and Sciences with a major in Ecosystem Science and Policy (ECS). The ECS major is offered through the Abess Center for Ecosystem Science and Policy (CESP). The goal of the ECS program is to educate the next generation of environmental scientists, policy makers, managers, and planners with grounding in the fundamentals of the natural sciences, social science, and public policy. This preparation will give students both the theoretical background and technical skills to pursue an environmental career, including teaching and research as well as for careers in government and private industries concerned with the environment. The course requirements for the dual degree program are as follows:
# Bachelor of Science in Environmental Engineering/Bachelor of Science with a major in Ecosystem Science and Policy

## Freshman Year

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
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<td>3</td>
</tr>
<tr>
<td>ENG 105</td>
<td>English Composition I</td>
<td>3</td>
</tr>
<tr>
<td>MTH 151</td>
<td>Calculus I for Engineers</td>
<td>5</td>
</tr>
<tr>
<td>PHY 205</td>
<td>University Physics I</td>
<td>3</td>
</tr>
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<td>ECS 111</td>
<td>Introduction to Earth Ecosystem</td>
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## Sophomore Year

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<th>Course Title</th>
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</thead>
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<td>PHY 207</td>
<td>University Physics III</td>
<td>3</td>
</tr>
<tr>
<td>PHY 209</td>
<td>University Physics III Lab</td>
<td>1</td>
</tr>
<tr>
<td>CHM 111</td>
<td>Principles of Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHM 113</td>
<td>Chemistry Laboratory I</td>
<td>1</td>
</tr>
<tr>
<td>ECS 201</td>
<td>Seminar Env. Issues I</td>
<td>1</td>
</tr>
<tr>
<td>IEN 311</td>
<td>Applied Probability and Statistics</td>
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## Junior Year

<table>
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<tr>
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<th>Course Title</th>
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<tr>
<td>CAE 330</td>
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<td>CAE 340</td>
<td>Intro. to Environmental Eng.g</td>
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<tr>
<td>BIL 235</td>
<td>Ecology</td>
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<td>MAE 303</td>
<td>Thermodynamics I</td>
<td>3</td>
</tr>
<tr>
<td>MTH 311</td>
<td>Ordinary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>MSC 111</td>
<td>Introduction to Marine Science</td>
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## Senior Year

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Eng. Course</td>
<td>3</td>
<td>CAE 402</td>
</tr>
<tr>
<td>CAE 403</td>
<td>Senior Design Project I</td>
<td>1</td>
</tr>
<tr>
<td>CAE 530</td>
<td>Water-Resources Engineering II</td>
<td>3</td>
</tr>
<tr>
<td>RSMAS PS Course</td>
<td>3</td>
<td>CAE 404</td>
</tr>
<tr>
<td>Humanities Elective*</td>
<td>3</td>
<td>ECS 403</td>
</tr>
<tr>
<td>POL 201</td>
<td>Intro. To Amer. Nat. Govt.</td>
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## Additional classes required to satisfy General Education Requirement for the Dual Bachelor of Science Degree (may be taken in the summer sessions)

<table>
<thead>
<tr>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
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<td>3 cr.</td>
</tr>
<tr>
<td>Humanities elective *</td>
<td>3 cr.</td>
</tr>
<tr>
<td>Foreign Language elective (200 level)</td>
<td>3 cr.</td>
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</table>

*Classes with satisfactory AP scores may be used to satisfy these requirements. The College of Arts and Sciences requires 12 credits from People and Society courses, 12 credits from Arts and Humanities courses and 3 credits in a language other than English at the 200 course level or higher.

Note: students must select RSMAS courses from the listed tracks. A minor in one of the two listed tracks will be awarded for 15 credits of MSC or RSMAS courses provided these include MSC 111, MSC 301 and at least 6 credits at the 300 level or higher. Required courses in the track count towards the 6 credits at the 300 level.
A six year dual degree program leading to a Bachelor of Science in Architectural Engineering and a Master of Science in Architecture is also available. The program is open to exceptional students who are admitted to the graduate program at the end of their junior year. Upon completion of this program, graduates are eligible for professional registration as both an engineer and an architect. The course requirements for the BSAE/MArch program are as follows:

### Bachelor of Science in Architectural Engineering and Master of Architecture

**key:** BSAE Curriculum, M. Arch Curriculum, & Shared BSAE/M. Arch Curriculum

| Year 1 | | Year 2 | | Year 3 | | Summer (REQUIRED 10 week semester) | | Year 4 | | Year 5 | | Year 6 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Year 1 | | Year 2 | | Year 3 | | Summer (REQUIRED 10 week semester) | | Year 4 | | Year 5 | | Year 6 |
| **Bachelor of Science in Architectural Engineering and Master of Architecture** | | **Year 2** | | **Year 3** | | **Summer (REQUIRED 10 week semester)** | | **Year 4** | | **Year 5** | | **Year 6** |
| **key:** BSAE Curriculum, M. Arch Curriculum, & Shared BSAE/M. Arch Curriculum | | **Year 2** | | **Year 3** | | **Summer (REQUIRED 10 week semester)** | | **Year 4** | | **Year 5** | | **Year 6** |
| **Year 1** | | **Year 2** | | **Year 3** | | **Summer (REQUIRED 10 week semester)** | | **Year 4** | | **Year 5** | | **Year 6** |
| **Year 1** | | **Year 2** | | **Year 3** | | **Summer (REQUIRED 10 week semester)** | | **Year 4** | | **Year 5** | | **Year 6** |
| **Year 1** | | **Year 2** | | **Year 3** | | **Summer (REQUIRED 10 week semester)** | | **Year 4** | | **Year 5** | | **Year 6** |
| **Year 1** | | **Year 2** | | **Year 3** | | **Summer (REQUIRED 10 week semester)** | | **Year 4** | | **Year 5** | | **Year 6** |

* To be selected from approved lists of People and Society/Humanities and Arts, Technical and Design Electives
The department also offers 5-year programs leading to the B.S. and the M.S. degrees. These programs are open to students who are admitted to the graduate program at the end of their junior year. Students applying for this program must have a minimum grade point average of 3.0, and score more than 1000 on the Graduate Record Examination. The course requirements for the five-year BS/MS programs are as follows:

**Bachelor of Science in Civil Engineering and Master of Science in Civil Engineering**

<table>
<thead>
<tr>
<th>Freshman Year:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CAE 111</td>
<td>Introduction to Engineering I</td>
</tr>
<tr>
<td>ENG 105</td>
<td>English Composition I</td>
</tr>
<tr>
<td>MTH 151</td>
<td>Calculus I for Engineers</td>
</tr>
<tr>
<td>PHY 205</td>
<td>University Physics I</td>
</tr>
<tr>
<td>People and Society Elective*</td>
<td></td>
</tr>
<tr>
<td>CAE 112*</td>
<td>Introduction to Engineering II</td>
</tr>
<tr>
<td>ENG 107</td>
<td>Writing About Science</td>
</tr>
<tr>
<td>MTH 162</td>
<td>Calculus II</td>
</tr>
<tr>
<td>PHY 206</td>
<td>University Physics II</td>
</tr>
<tr>
<td>PHY 208</td>
<td>University Physics II Lab</td>
</tr>
<tr>
<td>CAE 210</td>
<td>Mechanics of Solids I</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
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<table>
<thead>
<tr>
<th>Sophomore Year:</th>
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<tbody>
<tr>
<td>CAE 211</td>
<td>Mechanics of Solids II</td>
</tr>
<tr>
<td>CAE 212</td>
<td>Structural Laboratory</td>
</tr>
<tr>
<td>IEN 311</td>
<td>Applied Probability and Statistics</td>
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<tr>
<td>PHY 207</td>
<td>University Physics III</td>
</tr>
<tr>
<td>PHY 209</td>
<td>University Physics III Lab</td>
</tr>
<tr>
<td>MTH 211</td>
<td>Calculus III</td>
</tr>
<tr>
<td>CAE 310*</td>
<td>Structural Analysis</td>
</tr>
<tr>
<td>MTH 311</td>
<td>Ordinary Differential Equations</td>
</tr>
<tr>
<td>CHM 151</td>
<td>Chemistry for Engineers I</td>
</tr>
<tr>
<td>CHM 153</td>
<td>Chemistry Lab for Engineers</td>
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<td>CAE 370*</td>
<td>Geotechnical Engineering I</td>
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<tr>
<td>CAE 371*</td>
<td>Geotechnical Laboratory</td>
</tr>
<tr>
<td>CAE 430*</td>
<td>Water-Resources Engineering I</td>
</tr>
<tr>
<td>CAE 440*</td>
<td>Water Quality Control Systems</td>
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<td>MAE 303</td>
<td>Thermodynamics I</td>
</tr>
<tr>
<td>CAE 530</td>
<td>Transportation Engineering II</td>
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<tbody>
<tr>
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<td>CAE 321*</td>
<td>Steel Structures</td>
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<td>Fluid Mechanics</td>
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<td>CAE 340*</td>
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<td>CAE 350*</td>
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<td>MAE 303</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>Senior Year:</th>
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</thead>
<tbody>
<tr>
<td>CAE 402</td>
<td>Professional Engineering Practice</td>
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<tr>
<td>CAE 470*</td>
<td>Foundations &amp; Earth Retaining Sys.</td>
</tr>
<tr>
<td>CAE 470*</td>
<td>Foundations &amp; Earth Retaining Sys.</td>
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<td>Advanced PS/HA Elective*</td>
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<td>Tech Elective</td>
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<td>CAE 603*</td>
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<td>Graduate Level Course</td>
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<td><strong>9</strong></td>
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* To be selected from lists of approved People and Society (PS)/Humanities and Arts (HA), Technical, Design, and Basic Science electives; * Only offered once a year; ** CAE 520 or CAE 521
University of Miami Bulletin, 2012-2013  
Undergraduate, College of Engineering  

**Bachelor of Science in Architectural Engineering and Master of Science in Architectural Engineering**

<table>
<thead>
<tr>
<th>Freshman Year:</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>CAE 111</td>
<td>Introduction to Engineering I</td>
</tr>
<tr>
<td>CAE 112&lt;sup&gt;+&lt;/sup&gt;</td>
<td>Introduction to Engineering II</td>
</tr>
<tr>
<td>ENG 105</td>
<td>English Composition I</td>
</tr>
<tr>
<td>ENG 107</td>
<td>Writing About Science</td>
</tr>
<tr>
<td>MTH 151</td>
<td>Calculus I for Engineers</td>
</tr>
<tr>
<td>MTH 162</td>
<td>Calculus II</td>
</tr>
<tr>
<td>PHY 205</td>
<td>University Physics I</td>
</tr>
<tr>
<td>PHY 206</td>
<td>University Physics II</td>
</tr>
<tr>
<td>People and Society Elective*</td>
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</tr>
<tr>
<td>PHY 208</td>
<td>University Physics II Lab</td>
</tr>
<tr>
<td>CAE 210</td>
<td>Mechanics of Solids I</td>
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<td><strong>Total</strong></td>
<td><strong>17</strong></td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
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<table>
<thead>
<tr>
<th>Sophomore Year:</th>
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<tbody>
<tr>
<td>CAE 211</td>
<td>Mechanics of Solids II</td>
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<tr>
<td>CAE 212</td>
<td>Structural Laboratory</td>
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<td>University Physics III</td>
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<tr>
<td>PHY 209</td>
<td>University Physics III Lab</td>
</tr>
<tr>
<td>IEN 311</td>
<td>Applied Probability and Statistics</td>
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<tr>
<td>MTH 211</td>
<td>Calculus III</td>
</tr>
<tr>
<td>CAE 310&lt;sup&gt;+&lt;/sup&gt;</td>
<td>Structural Analysis</td>
</tr>
<tr>
<td>CAE 321&lt;sup&gt;+&lt;/sup&gt;</td>
<td>Steel Structures</td>
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<tr>
<td>CAE 330</td>
<td>Fluid Mechanics</td>
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<tr>
<td>MAE 303</td>
<td>Thermodynamics I</td>
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<td>ARC 292&lt;sup&gt;+&lt;/sup&gt;</td>
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</tr>
<tr>
<td>ARC 293&lt;sup&gt;+&lt;/sup&gt;</td>
<td>Intro. to Architecture Design II</td>
</tr>
<tr>
<td>ARC 476&lt;sup&gt;+&lt;/sup&gt;</td>
<td>19&lt;sup&gt;th&lt;/sup&gt; and 20&lt;sup&gt;th&lt;/sup&gt; Century Architecture</td>
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<tr>
<td>Technical Elective*</td>
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<td><strong>Total</strong></td>
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<table>
<thead>
<tr>
<th>Junior Year:</th>
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<tbody>
<tr>
<td>CAE 320&lt;sup&gt;+&lt;/sup&gt;</td>
<td>Concrete Structures</td>
</tr>
<tr>
<td>CAE 330</td>
<td>Fluid Mechanics</td>
</tr>
<tr>
<td>MAE 303</td>
<td>Thermodynamics I</td>
</tr>
<tr>
<td>ARC 293&lt;sup&gt;+&lt;/sup&gt;</td>
<td>Intro. to Architecture Design II</td>
</tr>
<tr>
<td>ARC 294&lt;sup&gt;+&lt;/sup&gt;</td>
<td>19&lt;sup&gt;th&lt;/sup&gt; and 20&lt;sup&gt;th&lt;/sup&gt; Century Architecture</td>
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<tr>
<td>ARC 370&lt;sup&gt;+&lt;/sup&gt;</td>
<td>Geotechnical Engineering I</td>
</tr>
<tr>
<td>ARC 371&lt;sup&gt;+&lt;/sup&gt;</td>
<td>Geotechnical Laboratory</td>
</tr>
<tr>
<td>ARC 380&lt;sup&gt;+&lt;/sup&gt;</td>
<td>Electrical &amp; Illum. Sys for Bldgs.</td>
</tr>
<tr>
<td>ARC 381&lt;sup&gt;+&lt;/sup&gt;</td>
<td>Mechanical Systems for Buildings</td>
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<td>People and Society Elective*</td>
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<tr>
<td>CAE 480&lt;sup&gt;+&lt;/sup&gt;</td>
<td>Design of Environ. Sys for Bldgs.</td>
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<td>CAE 470&lt;sup&gt;+&lt;/sup&gt;</td>
<td>Found. Eng. &amp; Earth Retaining Sys</td>
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<tr>
<td>ARC 517&lt;sup&gt;+&lt;/sup&gt;</td>
<td>Construction Documents</td>
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<tr>
<td>ARC 520&lt;sup&gt;+&lt;/sup&gt;</td>
<td>Advanced PS/HA Elective*</td>
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<tr>
<td>CAE 603&lt;sup&gt;+&lt;/sup&gt;</td>
<td>Master Design Project I</td>
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To be selected from lists of approved People and Society (PS)/Humanities and Arts (HA), Technical and Design electives;  
<sup>+</sup> Only offered once a year;  
<sup>$$</sup> CAE 520 or CAE 521
# Bachelor of Science in Environmental Engineering and Master of Science in Civil Engineering

## Freshman Year:

<table>
<thead>
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<tr>
<td>CAE 111</td>
<td>Introduction to Engineering I</td>
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<tr>
<td>ENG 105</td>
<td>English Composition I</td>
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<tr>
<td>MTH 151</td>
<td>Calculus I for Engineers</td>
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<tr>
<td>PHY 205</td>
<td>University Physics I</td>
<td>3</td>
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## Sophomore Year:

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<tr>
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<tbody>
<tr>
<td>CAE 210</td>
<td>Mechanics of Solids I</td>
<td>3</td>
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<tr>
<td>PHY 207</td>
<td>University Physics III</td>
<td>3</td>
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<td>PHY 209</td>
<td>University Physics III Lab</td>
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<tr>
<td>MTH 211</td>
<td>Calculus III</td>
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<tr>
<td>CHM 111</td>
<td>Principles of Chemistry I</td>
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<td>IEN 311</td>
<td>Applied Probability and Statistics</td>
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## Junior Year:

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<td>MAE 303</td>
<td>Thermodynamics I</td>
<td>3</td>
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<tr>
<td>MSC 111</td>
<td>Introduction to Marine Science</td>
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<tr>
<td>CHM 111</td>
<td>Chemistry Laboratory I</td>
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<tr>
<td>IEN 311</td>
<td>Applied Probability and Statistics</td>
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## Senior Year:

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<td>CAE 530</td>
<td>Water-Resources Engineering II</td>
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<td>RSMAS Course</td>
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<td>Advanced PS/HA Elective*</td>
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<tr>
<td>CAE 603</td>
<td>Master Design Project I</td>
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## Graduate Year:

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<tr>
<td>Graduate Level Course</td>
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<td>3</td>
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</tbody>
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* Only offered once a year; # Co-requisite CAE 212 not required for EnE majors; * To be selected from lists of approved People and Society (PS)/Humanities and Arts (HA), Biological Science and Technical electives; ** CAE540, CAE 533 and CAE 542 offered on a 3-semester rotation. Students must take these three courses
MINOR IN CIVIL, ARCHITECTURAL OR ENVIRONMENTAL ENGINEERING
(for students in the College of Arts and Sciences and the School of Architecture)

A Minor in Civil, Architectural, or Environmental Engineering requires 15 credits passed with a grade of C or higher. Students are required to satisfy the prerequisites for all courses, and are required to complete the core course, CAE 210, plus an additional 12 or 13 credits within an area of specialization. The additional credits required for minors in civil, architectural, and environmental engineering are as follows:

Minor in Civil Engineering

GEOTECHNICAL TRACK
CAE 211 (CAE 212 optional), CAE 330, CAE 370/371, CAE 470.

STRUCTURAL TRACK
CAE 211 (CAE 212 optional), CAE 310, and any two of: CAE 320, CAE 321, CAE 520 and CAE 521

Minor in Architectural Engineering

STRUCTURAL TRACK
CAE 211 (CAE 212 optional), CAE 310, CAE 320, and CAE 321

MECHANICAL/ELECTRICAL Systems TRACK
CAE 330, CAE 380, CAE 381, and CAE 480

Minor in Environmental Engineering

CAE 330, CAE 340, CAE 430, and CAE 440

Civil, Architectural & Environmental Engineering Course Listing
MISSION STATEMENT

The mission of the Department of Electrical and Computer Engineering is to achieve and maintain, through a continuous improvement process, excellence in undergraduate and graduate education, research, and service to the community and the nation. We endeavor to accomplish this by providing high-quality education and research programs which will impart the requisite knowledge and skills to our students enabling them to assume leadership roles in contributing to the advancement of the underlying electrical and computer engineering technologies which sustain the current world economy, to promote a strong commitment to life-long learning, to prepare them for a variety of alternative career paths and to participate as responsible citizens in a rapidly changing and shrinking global community.

INTRODUCTION

Electrical and Computer Engineering are complementary disciplines that are at the forefront of the continuing development and evolution of our modern technological society. Electrical and computer engineers have initiated and contributed to the development of such important and diverse areas as integrated electronics and photonics, telecommunication systems and computer networks, computer hardware and software, image processing and computer vision, automation and robotics, electrical power generating and transmission systems, as well as participated in the development of significant applications to biotechnology. These technologies have significantly transformed how our evolving society will live, learn, work, communicate and do business in the 21st century and are critical to the development of a sustainable world economy. It is an exciting and challenging discipline offering a variety of rewarding career paths. The Department of Electrical and Computer Engineering offers a number of innovative academic and research programs to help prepare students to achieve a variety of career goals.

The Department offers two undergraduate degree programs:

1. Bachelor of Science in Electrical Engineering degree program (B.S.E.E.)
2. Bachelor of Science in Computer Engineering degree program (B.S.Cp.E.)

The Electrical Engineering and the Computer Engineering degree programs are accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET).

In addition, the Department offers graduate courses leading to the Degree of Master of Science in Electrical and Computer Engineering (M.S.E.C.E.), and the Doctor of Philosophy degree (Ph.D.). For further information see the Bulletin of the Graduate School.
BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING (B.S.E.E.)

The Electrical Engineering degree program has two options:

1- Electrical Engineering Option;
2- Audio Engineering Option;

These options require specialized courses as well as the 49 Engineering Credit Hours required in the accredited Electrical Engineering degree program.

**Electrical Engineering** is concerned with the design, analysis and implementation of a variety of systems, components and devices, primarily of an electrical or electronic nature, which form the cornerstone of our complex and technologically oriented society. This ranges from small-scale integrated electronics and photonics systems and devices, the technological drivers of the information technology revolution, to large-scale electrical power systems and power generators, which supply the nation’s energy needs and form the basis for sustained economic growth. Electrical engineering is a rapidly changing discipline. To adequately train students to meet the challenges of the future and to assume leadership roles in the practice of electrical engineering, the department has in place a modern curriculum that reflects best practices in the industries we serve and is constantly updated to incorporate new technological, scientific and economic developments. The curriculum in the first two years provides a thorough background and in-depth preparation in the physical and mathematical sciences as well as fundamental knowledge and exposure to basic engineering principles and computer programming techniques. Students then concentrate on electrical engineering courses in their junior and senior years. Because of the overwhelming computer-oriented nature of modern electrical and electronic systems, students in electrical engineering are also expected to take courses in computer hardware and software and to incorporate this knowledge into a variety of design experiences offered.

**Audio Engineering** was developed with support from the School of Music in response to the need for industry professionals with the theoretical knowledge and the analytical, technical and design skills, which can only be acquired in a formal engineering degree. The Audio Engineering option combines traditional electrical engineering studies with audio studies in areas such as acoustics, digital audio, transducers, signal processing, post production, and recording. Our Audio Engineering graduates are highly sought by industry and have been pursuing successful careers in music/entertainment and the telecommunications industries, in the analog and digital electronics industry, and in the hearing aid/medical instrumentation industry, or have chosen to pursue graduate degrees. Students enrolled in Audio Engineering have access to a variety of well-equipped laboratories, At the College of Engineering the students are expected to be involved in laboratories of electronics, computing, digital design, signal processing, and audio and speech processing. At the School of Music students have access to the Gusman Concert Hall, which houses a professional recording studio with automated console and multi-track recording. There, students can record live concerts ranging from small jazz groups to a symphony orchestra. In addition, Audio Engineering students use the Weeks Center for Recording and Performance, which also features a fully professional recording studio, analog and digital signal processing equipment and audio test equipment.
EDUCATIONAL OBJECTIVES

The educational objectives of the Electrical Engineering Degree Program are to produce graduates who have the:

1. knowledge of mathematics, physics and the engineering sciences as well as the skill needed to plan, design, and develop successful solutions to electrical engineering problems.

2. broad educational background, professional and ethical context, and communication and team skills expected from a successful and responsible practicing electrical engineer.

3. background, preparation and experience necessary to be successful in graduate and professional degree programs, and a variety of alternative career paths.

4. foundations for independent learning and commitment to life-long education to continually improve, refine, and broaden their skills and competencies in the face of evolving technological developments and global needs.

This degree program endeavors to achieve its objectives by imparting to its students the fundamental principles underlying modern electrical engineering, along with the necessary skills and experiences to apply standard practices, methodologies and available tools for solving electrical engineering problems. The major areas of Electrical Engineering include electronics, analog and digital circuits, microprocessors, communications and control systems. The design sequence is spread throughout the educational experience curricula, culminating in the two-semester senior design project. Graduates are expected to keep pace with this rapidly evolving discipline. To this end, the faculty stresses the importance of continued education and life-long professional development by trying to instill in their students a sense of excitement for the prospects of this evolving technology, tempered by a strong sense of responsibility and concern for its potential impacts on society.
## Requirements of the Electrical Engineering Degree Program (B.S.E.E)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Electrical Option</th>
<th>Audio Option</th>
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<tr>
<td>EEN 111 Intro. To Engineering I</td>
<td>3</td>
<td>✓</td>
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<tr>
<td>EEN 112 Intro. To Engineering II</td>
<td>2</td>
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<td>✓</td>
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<tr>
<td>EEN 118 Intro. To Programming</td>
<td>3</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>EEN 201 Electric Circuits I</td>
<td>3</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>EEN 204 Electric Circuits Lab</td>
<td>1</td>
<td>✓</td>
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<tr>
<td>EEN 218 Data Structures</td>
<td>3</td>
<td>✓</td>
<td>✓</td>
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<td>EEN 304 Logic Design</td>
<td>3</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>EEN 305 Electronics I</td>
<td>3</td>
<td>✓</td>
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<tr>
<td>EEN 306 Electronics II</td>
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<td>EEN 307 Electric Circuits II</td>
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<td>EEN 311 Electronics Lab</td>
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<tr>
<td>EEN 312 Microprocessor</td>
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<td>EEN 315 Digital Design Lab</td>
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<td>EEN 316 Structured Digital Design</td>
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<tr>
<td>EEN 336 Signals &amp; Systems</td>
<td>3</td>
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<td>EEN 415 Senior Design I</td>
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### Total Common Engineering Credits

49  
49  
49

### Additional Engineering and Technical Elective

- EEN 301- 3
- ECE Elect – 9
- Tech Elect - 9
- EEN 437-1
- EEN 502-3
- EEN 540-3
- Tech Elec-2/3

### Total Additional Engineering and Technical Elective Credits

21  
9/10

## Total Engineering and Tech. Elec. Credits

70  
58/59

### MMI (Music Media)+ MTC (Music Theory)

--  
16 + 3

### Total Math & Basic Sciences Credits

33  
33

### Total General Education Credits

24  
24

### Total Credits

127  
134/5
### MAJOR

#### ELECTRICAL ENGINEERING OPTION- 127 credits

#### FRESHMAN YEAR

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<td>Fall</td>
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<td>ENG 105 English Composition I</td>
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<td>MTH 151 Calculus I For Engineers</td>
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<td>PHY 205 University Physics I</td>
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<td>Spring</td>
<td>EEN 112 Introduction to Engineering II</td>
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<td>EEN 118 Introduction to Programming</td>
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<td>ENG 107 Writing about Science</td>
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<td>MTH 162 Calculus II</td>
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<td>PHY 206 University Physics II</td>
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#### SOPHOMORE YEAR

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<td>EEN 218 Data Structures</td>
<td>3</td>
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<td>MTH 210 Vectors and Matrices</td>
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<td>PHY 207 University Physics III</td>
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<td>PHY 209 University Physics III Lab</td>
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<td>Humanities and Arts Elective*</td>
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<td>Spring</td>
<td>EEN 204 Electrical Circuits Laboratory</td>
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<td>EEN 305 Electronics I</td>
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<td>EEN 307 Linear Circuits and Signals</td>
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<td>CHM 151 Chemistry for Engineers I</td>
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#### JUNIOR YEAR

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<td>EEN 306 Electronics II</td>
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<td>EEN 311 Electronics Laboratory</td>
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<td></td>
<td>EEN 315 Digital Design Laboratory</td>
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<td>EEN 336 Signals and Systems</td>
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<td>IEN/EEN 310 Engineering Probability</td>
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#### SENIOR YEAR

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<tr>
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<td>ECE Design Elective*</td>
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<td>Technical Elective*</td>
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*See description of electives under the Departmental Electives Section.

‡ Offered only in the Fall semester.
AUDIO ENGINEERING OPTION –134/135 Credits

**FRESHMAN YEAR**

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<tr>
<th>Fall Semester</th>
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<tr>
<td>EEN 111 Introduction to Engineering I</td>
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<td>ENG 105 English Composition I</td>
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<td>MTH 151 Calculus I For Engineers</td>
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<td>ENG 107 Writing about Science</td>
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<td>MTC 109 Music Theory Skills I</td>
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<td>EEN 201 Electrical Circuit Theory</td>
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<td>MMI 201 Introduction to Music Recording</td>
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<td>Fall Semester</td>
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<tr>
<td>EEN 306 Electronics II</td>
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<td>EEN 436 Intro. Digital Signal Processing</td>
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<td>EEN 502 Engineering Acoustics</td>
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* See description of electives under the Electrical and Computer Engineering Section.
** Note that MMI504 could be substituted for MMI 436
***Select one from: MCY 124, MCY 127, MCY 131 or any MCY course approved by the academic advisor
§ Offered only in the Fall semester

**DOUBLE DEGREE PROGRAM - B.S.E.E. & B.S.B.E.**
A BME student who satisfies the requirement of the B.S.B.E. degree with electrical orientation as described in this Bulletin may also qualify for the B.S.E.E. degree by taking the following additional courses: EEN 218, 301, 306, 311, 312, 316, 336, one ECE Design Elective, two EE Core Electives, three ECE Electives as well as having an ECE Faculty as co-sponsor of the Senior Project.

**THE FIVE-YEAR B.S.E.E.-M.S.ECE. DUAL DEGREE PROGRAM**
This is a structured and integrated program with a minimum of 152 approved credits including two required courses EEN 615 & 616. At least thirty credits must be at the graduate (500 or 600 level). Of these at least 12 credits must be at the 600 level.
Note that:

- Interested EEN Juniors with cumulative GPA above 3.0 may declare their intent to participate by submitting an official application to the Departmental Graduate Committee for admission into the MSECE portion of the program.
- A student wishing to drop out of the five-year program without the MSECE degree could receive the BSEE degree after completing all its requirements, including the senior design project.
- All students must take the Graduate Record Examination before beginning their fifth-year courses.
- To qualify for the MSECE degree, students must meet all the pertinent Graduate School requirements, including an acceptable GRE score and a minimum of 3.0 GPA in the 30 credits applied towards the MSECE degree.
- The student is awarded both the BSEE and the MSECE degrees after the requirements for both degrees are satisfied.

**COURSE REQUIREMENT FOR THE BSEE-MSECE FIVE YEAR DUAL DEGREE PROGRAM (152 credits)**

The first three years are the same as in the undergraduate B.S.E.E. program with 97 credits. The remaining 55 credits shown below should include at least ten graduate courses of which, at least four are at the 600 level. Also see description of electives under the Electrical and Computer Engineering Section.

<table>
<thead>
<tr>
<th>FRESHMAN YEAR</th>
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<tbody>
<tr>
<td><strong>Fall Semester</strong></td>
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<tr>
<td>EEN 111 Introduction to Engineering I</td>
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<td>EEN 118 Introduction to Programming</td>
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<td>MTH 151 Calculus For Engineers</td>
<td>ENG 107 Writing about Science</td>
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<td>PHY 205 University Physics I</td>
<td>MTH 162 Calculus II</td>
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<tr>
<td>EEN 201 Electrical Circuit Theory</td>
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<td>EEN 301 Electromagnetic Field Theory</td>
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<td>EEN 315 Digital Design Laboratory</td>
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Senior Year

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Fifth Year

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<td>600 Level Technical Elective*</td>
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<td>9</td>
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</tbody>
</table>

*See description of electives under the Departmental Electives Section.
All courses shown in red should be taken as Graduate (G) courses.
$ Offered only in the Fall semester

Minor in Electrical Engineering

Non-ECE Students wishing to minor in Electrical Engineering should satisfy a 15 credit requirement specified as follows:

1. A core of seven credits consisting of EEN 201, EEN 204, and EEN 305.

2. Eight or more credits of Electrical Engineering Electives. It is recommended that these elective credits be taken from one of the following two sets of EEN courses:

   - Communication (EEN 306, 307, 311, 336, 404, 436, 534)

3. Students with a major in Computer Engineering wishing to add a minor in Electrical Engineering must take six Electrical Engineering course credits in addition to those needed to satisfy their degree requirements.

4. A 2.0 grade point average in all EEN courses taken.
BACHELOR OF SCIENCE IN COMPUTER ENGINEERING (B.S.Cp.E.)

Computer engineering is concerned with the characterization, design, analysis and implementation of hardware, software and the overall architecture of computers and computer systems, and with the development of applications enabled by such configurations. This ranges from embedded microprocessors and associated software supporting a variety of familiar devices, to large-scale distributed computer systems interconnected by high-speed telecommunication networks controlled by sophisticated communication protocols. Since modern electronic computing systems are digital in nature, the program provides in-depth coverage of a range of topics dealing with digital information processing systems. Among the topics covered are digital system design, computer organization and architecture, operating systems, software engineering, database systems, image processing and computer vision, programming languages, microprocessor-based systems, digital communications, computer communication networks, wireless and mobile networks, design and implementation of very large scale integrated (VLSI) circuits and systems, artificial intelligence, data mining, agent technology, computer graphics, and multimedia systems and networks.

Computer engineering is a rapidly changing and evolving discipline driven by new technology developments and marketplace conditions. To adequately train students to meet the challenges of the future and to assume leadership roles in the practice of computer engineering, the department offers an up-to-date curriculum that reflects new technology developments that have the potential for significantly impacting professional practice in the industry. The curriculum is constantly updated to incorporate new technological, scientific and economic developments.

Alternatively, students can earn a Bachelor of Science in Computer Engineering under the Software Engineering option, which is primarily focused on the systematic and disciplined development of software systems. This option focuses on the application of computer engineering and computer science principles and practices to the creation, operation, and maintenance of software applications and systems.

EDUCATIONAL OBJECTIVES

The educational objectives of the Computer Engineering Degree Program are to produce graduates who have the:

1. knowledge of mathematics, physics and the engineering sciences as well as the skill needed to plan, design, and develop successful solutions to computer engineering problems.

2. broad educational background, professional and ethical context, and communication and team skills expected from a successful and responsible practicing computer engineer.

3. background, preparation and experience necessary to be successful in graduate and professional degree programs, and a variety of alternative career paths.

4. foundations for independent learning and commitment to life-long education to continually improve, refine, and broaden their skills and competencies in the face of evolving technological developments and global needs.
DEGREE PROGRAM

This degree program endeavors to achieve its objectives by imparting to its students the fundamental principles underlying modern computer engineering, along with the necessary skills and experiences to apply standard practices, methodologies and modern tools for solving computer engineering problems. The major areas of computer engineering include digital systems, algorithms and data structures, computer architecture, microprocessors, operating systems, software engineering, databases, and artificial intelligence.

The computer engineering design sequence is spread throughout the curriculum, culminating in a two semester senior design project.

Graduates are expected to keep pace with this rapidly-evolving discipline. To this end, the faculty stresses the importance of continued education and life-long professional development, by trying to instill in their students a sense of excitement for the prospects of this evolving technology, tempered by a strong sense of responsibility and concern for its potential impacts on society.

The Computer Engineering degree program has two options:

1. Computer Engineering Option
2. Software Engineering Option

These options require a common engineering core, along with specialized courses
### Requirements of the Computer Engineering Degree Program (B.S.Cp.E)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Computer Option</th>
<th>Software Option</th>
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<tr>
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<tr>
<td>EEN 112 Intro. To Engineering II</td>
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<tr>
<td>EEN 201 Electric Circuits I</td>
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<td>EEN 316 Structured Digital Design</td>
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<tr>
<td>EEN 318 Advanced Computer Programming</td>
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<td>EEN 424 Systems Programming</td>
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<td>EEN 514 Computer Architecture</td>
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<td>EEN 521 Operating Systems</td>
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<td>EEN 567 Database Design and Management</td>
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**Total Common Engineering Credits** 48

**Additional Engineering and Technical Electives**

- EEN 306 – 3
- EEN 307 – 3
- EEN 311 – 1
- EEN 417 – 2
- EEN 454 – 2
- EEN 455 – 1
- CE Tech.Elec – 9
- EEN 512 – 3
- EEN 513 – 3
- EEN 570 – 3
- SE Tech. Elec -9

**Total Additional Engineering and Technical Elective Credits** 21

**Total Engineering and Technical Elective Credits** 69

- Computer Science Credits 6
- Total Math and Basic Sciences Credits 35
- Total General Education Credits 24

**Total Credits** 128
### MAJOR

#### COMPUTER ENGINEERING OPTION CURRICULUM – 128 Credits

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<tr>
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<td>ENG 105 English Composition I</td>
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<td>ENG 107 Writing about Science</td>
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<td>MTH 151 Calculus I For Engineers</td>
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<td>EEN 201 Electric Circuits</td>
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<td>EEN 318 Advanced Computer Programming</td>
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<td>EEN 315 Digital Design Laboratory</td>
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<td>MTH 210 Introduction to Linear Algebra</td>
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<td>PHY 206/207 University Physics II/III</td>
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<td>PHY 208/209 University Physics II/III Lab</td>
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<td>MTH 309 Discrete Mathematics I</td>
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<td>EEN 312 Microprocessor</td>
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<td>EEN 414 Computer Organization and Design</td>
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<td>EEN 316 Structured Digital Design</td>
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<td>EEN 454 Digital System Design and Testing</td>
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<td>EEN 455 Design-for-Testability Laboratory</td>
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<td>EEN 567 Database Design and Management</td>
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<td>Humanities and Arts Elective*</td>
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<td>People and Society Elective*</td>
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<th>Senior Year</th>
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<td>EEN 311 Electronics Laboratory</td>
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<td>EEN 419 Senior Project</td>
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<td>EEN 417 Embedded Microprocessor System Design</td>
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<td>EEN 418 Senior Project Planning*</td>
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<td>EEN 521 Computer Operating Systems</td>
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<td>EEN 424 Systems Programming</td>
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<td>MTH 311 Ordinary Differential Equations</td>
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<td>Adv. HA/PS Elective*</td>
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*See description of electives under the Departmental Electives Section.

* Offered only in the Fall semester
COMPUTER ENGINEERING – SOFTWARE ENGINEERING OPTION

Software Engineering is concerned primarily with the systematic and disciplined approach to developing software systems. It requires the application of both computer engineering and computer science principles and practices to the creation, operation, and maintenance of software systems and applications. The Software Engineering Option of the Bachelor of Science in Computer Engineering degree at the University of Miami is a unique and interdisciplinary program developed and administered collaboratively by the Department of Electrical and Computer Engineering and the Department of Computer Science. The Software Engineering Option prepares students for successful careers in software engineering. Software systems are becoming increasingly complex, and emerging technologies are pushing the boundaries of reusable components and software quality assurance. To prepare students to meet these challenges, this option establishes a solid foundation of software system fundamentals, coupled with strong hands-on experience and an understanding of professional practice and conduct. In addition to the core curriculum in software engineering, students are introduced to the paradigms of real-time, adaptive, and collaborative software systems, through a wide range of technical elective courses in the departments of Electrical and Computer Engineering, Computer Science, and other departments in the University of Miami. The technical electives allow students to apply the knowledge they have gained to different application areas. This provides valuable hands-on experience in contemporary application areas, which enhances the students’ potential career development opportunities.

Students pursuing the Software Engineering Option of the Bachelor of Science in Computer Engineering degree must earn at least 15 credits in Computer Science as part of their degree requirements.
### SOFTWARE ENGINEERING OPTION CURRICULUM - 128 credits

#### FRESHMEN YEAR

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
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<tbody>
<tr>
<td>EEN 111 Introduction to Engineering I 3</td>
<td>EEN 112 Introduction to Engineering II 2</td>
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<tr>
<td>EEN 118 Introduction to Programming 3</td>
<td>EEN 218 Intermediate Computer Programming 3</td>
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<td>ENG 105 English Composition I 3</td>
<td>ENG 107 Writing About Science 3</td>
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<tr>
<td>MTH 151 Calculus I For Engineers 5</td>
<td>MTH 162 Calculus II 4</td>
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<td>PHY 205 University Physics I 3</td>
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#### SOPHOMORE YEAR

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<td>EEN 304 Logic Design 3</td>
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<tr>
<td>EEN 318 Advanced Computer Programming 3</td>
<td>IEN/EEN 310 Engineering Probability 3</td>
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<td>MTH 210 Introduction to Linear Algebra 3</td>
<td>EEN 315 Digital Design Laboratory 1</td>
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<tr>
<td>PHY 206/207 University Physics II/III 3</td>
<td>MTH 309 Discrete Mathematics I 3</td>
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<td>PHY 208/209 University Physics II/III Lab 1</td>
<td>Basic Science Elective* 3</td>
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<tr>
<td>People and Society Elective* 3</td>
<td>Basic Science Lab Elective* 1</td>
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<td>PHI 115 Social and Ethical Issues in Computing 3</td>
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#### JUNIOR YEAR

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<td>EEN 316 Structured Digital Design 1</td>
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<tr>
<td>EEN 305 Electronics I 3</td>
<td>EEN 513 Software Design and Testing 3</td>
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<tr>
<td>EEN 312 Microprocessor 4</td>
<td>CSC/EEN 521 Computer Operating Systems 3</td>
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<tr>
<td>CSC 322/EEN 424 Systems Programming 3</td>
<td>CSC 523 Databases Systems or</td>
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<tr>
<td>EEN 512 Software Architecture 3</td>
<td>EEN 567 Database Design and Management 3</td>
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<td>People and Society Elective* 3</td>
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#### SENIOR YEAR

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<th>Fall Semester</th>
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<tr>
<td>EEN 414 Computer Organization and Design 3</td>
<td>EEN 419 Software Eng. Senior Project 2</td>
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<td>EEN 418 Software Eng. Senior Project Planning§ 1</td>
<td>EEN 514 Computer Architecture 3</td>
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<td>CSC 517 Algorithms and Data Structures 3</td>
<td>EEN 570 Network Client-Server Programming 3</td>
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<td>Software Engineering Technical Elective* 3</td>
<td>CSC 519 Programming Languages 3</td>
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<td>Adv. HA/PS Elective* 3</td>
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</tbody>
</table>

*See description of electives under the Departmental Electives Section.

§ Offered only in the Fall semester

**Students must earn at least 15 credits in Computer Science (CSC)**

**Students must have at least 32 credits of Math and Science**
THE FIVE-YEAR B.S.Cp.E.-M.S.E.C.E. DUAL DEGREE PROGRAM

This is a structured and integrated program that includes seven additional courses and replaces three technical elective courses as well as one senior design course currently required under the B.S.Cp.E. Degree as follows:

- Four required courses: EEN 368, 418, 615, 616.
- Two Electrical Engineering Technical elective courses from: EEN 500, 516, 532, 533, 542, 555.
- Two Computer Engineering Software elective courses from: EEN 511, 512, 513, 519, 568.
- Five Computer Engineering Advanced elective courses from the following: Electrical Engineering Technical electives, Computer Engineering Software electives, EEN 336, 436, 534, 536, 537, 538, 540, 548, 553, 570, 571, 572, 574-577, 586, 587, 614, 634, 638, 653, 671, as well as CSC 544, 529. Computer Engineering Advanced electives are to be selected in consultation with the advisor.
- At least thirty credits must be at the graduate (500 or 600) level. Of these, at least twelve credits must be in courses open to graduate students only (600 level).
- Interested Computer Engineering juniors with cumulative GPA above 3.0 may declare their intent to participate by submitting an official application to the Departmental Graduate Committee for admission into the M.S.E.C.E. portion of the program.
- A student wishing to drop out of the five-year program without the M.S.E.C.E. degree could receive the B.S.Cp.E. degree after completing all its requirements, including the senior design project.
- All students must take the Graduate Record Examination before beginning their fifth-year courses.
- To qualify for the M.S.E.C.E. degree, students must meet all the pertinent Graduate School requirements, including an acceptable GRE score and a minimum of 3.0 GPA in the 30 credits applied towards the M.S.E.C.E. degree.
- The student is awarded both the B.S.Cp.E. and the M.S.E.C.E. degrees after the requirements for both degrees are satisfied.
## COURSE REQUIREMENT FOR THE B.S.Cp.E. – M.S.E.C.E. FIVE YEAR DUAL DEGREE PROGRAM (153 credits)

<table>
<thead>
<tr>
<th>Year</th>
<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<td>EEN 111</td>
<td>Introduction to Engineering I</td>
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<td>EEN 118</td>
<td>Introduction to Programming</td>
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<td>ENG 105</td>
<td>English Composition I</td>
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<td>MTH 151</td>
<td>Calculus I For Engineers</td>
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<td>Spring Semester</td>
<td>EEN 112</td>
<td>Introduction to Engineering II</td>
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<td>EEN 218</td>
<td>Intermediate Computer Programming</td>
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<td>Writing about Science</td>
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<td>Sophomore Year</td>
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<td>Logic Design</td>
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<td>MTH 210</td>
<td>Introduction to Linear Algebra</td>
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<td>PHY 206/207</td>
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<td>Spring Semester</td>
<td>EEN 201</td>
<td>Electric Circuits I</td>
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<td>EEN 315</td>
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<td>EEN/IEN 310</td>
<td>Engineering Probability</td>
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<td>Basic Science Elective*</td>
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<td>MTH 309</td>
<td>Discrete Mathematics I</td>
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<td>Spring Semester</td>
<td>EEN 306</td>
<td>Electronics II</td>
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<td>EEN 307</td>
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<td>EEN 454</td>
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<td>EEN 455</td>
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<td>EEN 567</td>
<td>Database Design and Management</td>
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<td>Adv. HA/PS Elective*</td>
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<td>Fourth Year</td>
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<td>EEN 311</td>
<td>Electronics Laboratory</td>
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<td>EEN 417</td>
<td>Embedded Microprocessor System Design</td>
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<td>EEN 418</td>
<td>Senior Project Planning</td>
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<td>EEN 424</td>
<td>UNIX Systems and Servers</td>
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<td>Ordinary Differential Equations</td>
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<td>Spring Semester</td>
<td>EEN 368</td>
<td>Internet Computing I</td>
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<td>Fifth Year (Graduate Credits Only)</td>
<td>Fall Semester</td>
<td>EEN 615</td>
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<td>Spring Semester</td>
<td>EEN 616</td>
<td>M.S. Design Project II</td>
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*See description of electives under the Departmental Electives Section.

All courses shown in red should be taken as Graduate (G) courses.
MINOR IN COMPUTER ENGINEERING

Students wishing to minor in Computer Engineering must satisfy the following requirements:

1. A core of thirteen credits consisting of EEN 118, 218, 304, and 312.

2. At least five credits of computer engineering electives selected from the following courses: EEN 315, 316, 318, 368, 414, 424, 454/455, 511, 512, 513, 519, 521, 534, 537, 547, 567, 571.

3. Students with a major in Electrical Engineering wishing to add a minor in Computer Engineering must take six Computer Engineering course credits in addition to those needed to satisfy their degree requirements.

4. A minimum grade point average of 2.0 in all EEN courses taken.

DEPARTMENTAL LABORATORIES

The Department maintains a variety of well-equipped laboratories and computers adequate for undergraduate instruction and graduate research. The laboratories and computer facilities include:

Electronics Laboratory
Wireless Communications Laboratory
Digital Signal Processing Laboratory
Electrical Energy Conversion Laboratory
Digital Design Laboratory
Information Technology Laboratory
Microprocessor Laboratory
Electro-Optics and Micro-Devices Laboratory
Distributed Decision Environments Laboratory
Computer Vision and Image Processing Laboratory
Embedded Systems Laboratory
Underwater Imaging Laboratory
Networks Laboratory
Multimedia Laboratory (Arnold Center for Confluent Media Studies)
Digital Audio and Speech Processing Laboratory
ECE Computing Laboratory
Optics and Fiber Communications Laboratory

DEPARTMENTAL ELECTIVES

1. Humanities and Arts/People and Society Electives: selected from the appropriate table found in this Bulletin under the Engineering section.

2. EE Core Electives: EEN 308, 402, 404, 405, 435 and 436

3. ECE Electives: All EEN classes at the 300 level or above
4. Technical electives: All ECE or CoE courses, as well as courses from Math, Physics, Chemistry, Biology, Computer Science, selected in consultation with, and with the approval of, the academic advisor.

5. EE Design Elective: Select one from EEN 435, 454 & 455, 516, 532, 542, 552, 555 or any EEN course approved by the Academic Advisor.

6. Basic Science (/Lab) Electives are selected in consultation with the Academic Advisor from courses in Biology, Chemistry, Environmental Science, Geological Science, Marine Science, or Physics.

7. Computer Engineering Technical Electives are selected in consultation with the Academic Advisor from the following list of courses: EEN 368, 511, 512, 513, 519, 532, 534, 537, 538, 542, 548, 553, 565, 568, 570, 571, 572, 574, 575, 576, 577, 578, 579, 586, and 587 or advisor-approved 300-level (or above) technical course. The EEN 421 and 422 sequence can also be used as one technical elective. In addition, one computer engineering elective course may be selected from the following computer science courses: CSC 517, 518, 527, 529, 540, and 555.

8. Software Engineering Technical Electives are selected in consultation with the Academic Advisor from the following list of courses: CSC329, CSC507, CSC527, CSC529, CSC540, CSC547, CSC555, EEN548, EEN553, EEN562, EEN568, EEN571, EEN572, EEN573, EEN574, EEN575, EEN576, EEN577, EEN579, EEN586, EEN587, (EEN534 or CSC524), (EEN537 or CSC545) or advisor-approved 300-level (or above) technical course.

**INTERNSHIP PROGRAM**

The Department of Electrical and Computer Engineering encourages its students to take advantage of the College of Engineering Internship Cooperative Program with Industry. Students could do that either on a part-time or a full-time arrangement. Students who wish to intern full-time for one semester or for twelve weeks in the summer may apply to earn as much as three credit hours that could be applied to their degree requirement as a Technical Elective. Students interested in such a possibility need to submit a proposal to the ECE Department describing the type of work they expect to accomplish approved by the industrial supervisor. If the proposal is approved the student will be assigned a Faculty Supervisor and will be able to register under EEN499. At the end of the Internship Program, the Student is expected to submit to the ECE Department a technical report with comments from the student industrial supervisor. The Faculty advisor will review the report and submit the appropriate grade for EEN499.

**NOTE 1:** An EEN course for which another EEN course is a prerequisite may not be taken unless the student has completed the EEN prerequisite course with a grade of C- or better.

**NOTE 2:** All EEN courses at the 300 level or above must be taken at UM.

**DEPARTMENTAL HONORS**

See College of Engineering section.
ENGINEERING SCIENCE

INTRODUCTION

The curricula in the engineering sciences have been designed to prepare a student to fill the gap between the pure and applied sciences. The programs have been planned to enable the graduate to meet, work, and communicate with scientists and engineers at all levels of research and development, design and production, sales and distribution and to participate in the rapid and efficient translation of the latest scientific discoveries into technological achievements.

The general curriculum outlined below has been developed to give the student a firm foundation in the engineering sciences supported by a thorough grounding and facility in mathematics, physics and chemistry. In addition, each student will choose an area of specialization in at least one of the Engineering fields of architectural, civil, biomedical, electrical, industrial, or mechanical, and mathematics, chemistry or physics. By being well grounded in both the basic and applied sciences, the student, upon graduation, will be well prepared to assume responsibilities in his/her field of specialization or continue his/her professional development through graduate studies.

The engineering science program is intended primarily for students who expect to pursue graduate studies, and it will not satisfy the licensure requirements for professional engineering registration.

Premedical Studies: When BIL 150 and 160 are added to the course sequence for engineering science, basic premedical requirements are satisfied. Additional specific courses, such as genetics or biochemistry, may be required for admission to certain medical schools. For optimum timing and course selection students who combine premedical studies and engineering science should consult the faculty advisor for engineering science and the Coordinator, Committee on Premedical Studies.

Because of the nature of the curriculum and its goals, the student must maintain a B average. The degree of Bachelor of Science Engineering Science is awarded upon successful completion of the program.

The required curriculum for the degree of Bachelor of Science in Engineering Science (General Concentration) is shown below as is a typical premed curriculum. A Professional Chemistry Concentration in the Engineering Science Program is available (the Professional Chemistry Program, approved by the American Chemical Society, is also available in the College of Arts and Sciences).

MISSION STATEMENT

The mission of the Engineering Science program is to provide excellent undergraduate and graduate education in engineering that will prepare graduates to meet Societies changing needs and aspirations.
EDUCATIONAL OBJECTIVES

The objectives of the Engineering Science program are to educate engineers who:

- have a sound background in the fundamentals of engineering science grounded in mathematics, physics and chemistry
- have abilities and knowledge expected by graduate programs
- are prepared to enter graduate programs with a strong background in pure science

DEGREE PROGRAMS

ENGINEERING SCIENCE CURRICULUM (General Concentration) 123-124 credits

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<thead>
<tr>
<th>FRESHMAN YEAR</th>
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<tr>
<td><strong>Fall Semester</strong></td>
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<td>MAE 111 Introduction to Engineering I</td>
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<td>PHY 360 Introduction to Modern Physics</td>
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** Technical Electives are advanced courses in mathematics, science or engineering, approved by the Faculty Advisor, as appropriate for individual objectives.

*** Applied electives are advanced courses selected in coordination with the Faculty Advisor and require his/her approval.
**ENGINEERING SCIENCE (Premed Concentration) 124 credits**

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** Electives are advanced courses selected in coordination with the Faculty Advisor and require his/her approval.
Mission Statement

The Department of Industrial Engineering’s mission is to provide contemporary and relevant industrial and systems engineering education and research; impart knowledge and skills necessary to design and to improve a variety of manufacturing and service processes; promote life-long learning; and contribute to emerging societal needs.

Overview

Industrial Engineering combines science and technical knowledge with human sciences to design, plan, and analyze systems that involve people, materials, money, energy, equipment, and other resources. Industrial engineers work with personnel in research and development, accounting, engineers in other disciplines, maintenance, human resources, and production to increase organizational productivity, improve quality, reduce health care costs, conserve energy, develop public transportation systems, and improve industrial safety conditions. Industrial engineering distinguishes itself from other engineering professions because it has applications in manufacturing, service, commercial, and governmental activities. It is the major branch of engineering concerned not only with technology, but with people, making industrial engineers a prime source of management talent.

Through consultation with his/her academic advisor, a student is assisted in choosing electives which will prepare him/her for a degree of specialization compatible with his/her future goals. The available concentrations are Engineering Management and Manufacturing. Specific courses required in each concentration are described in Degree Programs Section.

The Department of Industrial Engineering offers graduate programs leading to the Master of Science in Industrial Engineering, Master of Science in Environmental Health and Safety, and Master of Science in Management of Technology. The Department also offers a Ph.D. program in Ergonomics and Human Factors and a Ph.D. in Industrial Engineering. For further information, see the Bulletin of the Graduate School.

The Department of Industrial Engineering in cooperation with the School of Business Administration offers a dual MSIE/MBA weekend executive program. For more details of this program contact the Department of Industrial Engineering.

EDUCATIONAL OBJECTIVES

BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING

Industrial Engineering Program Educational Objectives

The major goal of the Industrial Engineering program at the University of Miami is to prepare graduates to contribute to the economy by virtue of employment in a variety of industries: manufacturing (heavy and light, traditional and high technology) and service (health care, retail, transportation, logistics, government, consulting, banking, and insurance). In striving to achieve this goal, the objective of the faculty is to provide all
graduates with the mathematical, scientific, and design tools required to formulate problems accurately, generate alternative solutions, evaluate those alternatives, and present the best solutions to clients or decision makers in a fashion that facilitates decision-making processes. In addition, superior students are prepared for graduate studies and research. Within the first several years following graduation from the Industrial Engineering program, graduates are expected to be:

1. Working as professionals by adding value in any one of the following sectors:
   - Service
   - Government
   - Consulting
   - Retail
   - Manufacturing

2. Pursuing or holding a graduate degree and/or developing professionally through continuing education, licensure, certification and seminars in a new area or their chosen areas of expertise.

The curriculum includes required courses in mathematics and the physical sciences that ensure a firm scientific background while advanced departmental courses provide specialization. Required courses in the people and society - humanities and arts give students the social, ethical and ecological awareness needed in their profession. The courses are designed with the prerequisite structure in mind so that students have to draw from previously acquired knowledge to successfully complete upper level course requirements.

The engineering design experience is interwoven in the curriculum throughout the students’ four years of study.

- Starting with IEN 111 Introduction to Engineering I and IEN 112 Introduction to Engineering II, an introduction to Engineering graphics, Auto CAD, MATLAB, C++, advanced Excel and Access are given.
- The students then move on to take IEN 201 Methods Analysis and Work Measurement where they perform work measurement projects in industry, write reports, and make oral presentations to management. In the Spring of their Junior year, the students take IEN 363 Project Management for Engineers and they are exposed to techniques and tools in project management such as use of network flow and MS Project.
- Students take IEN 361 Industrial Cost Analysis and IEN 380 Engineering Economy where they become aware of the impact of productivity on the economic and social well-being of industry and countries. The students are also introduced to basic models of decision making such as the formulation and evaluation of an economic strategy.
- IEN 406 Computer-Aided Manufacturing introduces the students to product design in manufacturing and modern concepts of CAD/CAM/Automation.
- IEN 441 Deterministic Models in Operations Research focuses on the formulation of linear programming problems and solutions by the simplex method. Related topics include sensitivity analysis, duality theory and network programming. Engineering applications are emphasized.
- IEN 442 Stochastic Models in Operations Research focuses on basic concepts and techniques of random processes that are used to develop models for a variety of engineering and managerial problems. Topics include the Poisson Process, Markov chains, renewal theory, queuing models, and reliability.
• IEN 465 Production and Inventory Control provides a thorough treatment of modern production and inventory management policies, and their ramifications on supply chain management.
• Theory and applications of decision support systems in industrial engineering are covered in IEN 524 Decision Support Systems in IE. The topics include the study of model-based data-based, knowledge-based, and communication-based decision support systems.
• In IEN 557 Ergonomics and Human Factors Engineering both laboratory projects and real-world projects are designed, discussed, and conducted.
• Industry based projects are embedded into several other courses such as IEN 512 Statistical Quality Control and Quality Management, IEN 547 Computer Simulation Systems, and IEN 568 Materials Handling and Facilities Planning.
• IEN 494 Senior Project is a capstone project course where the students pool all of their knowledge and previous design experience into one major project integrating all components of the curriculum together. These projects are usually industry-based. Students prepare written and oral presentations. These presentations are made before top management or engineers of the organization where the projects were conducted in the presence of the faculty representatives from the department.

Real world projects are an integral part of most junior and senior level courses. In these courses, communication is emphasized through requirements for oral presentation and written technical reports. This experience provides the graduates with valuable industrial experience and communications skills while studying at the University of Miami.

The teaching laboratories meet current program needs and are constantly being improved. Equipment and experiments are geared to provide instruction in the areas of production system design, work methods and measurement, human factors engineering, manufacturing processes, computer applications in industrial engineering and operations research.
DEGREE PROGRAMS

BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING (125 Credits)

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<td>IEN 201 Methods Analysis &amp; Work Measurements</td>
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<td>CHM 151 Chemistry for Engineers I</td>
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<td>PHY 209 University Physics III Laboratory</td>
<td>CHM 153 Chemistry Laboratory for Engineers</td>
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<td>IEN 512 Statistical Quality Control and Quality Management</td>
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<td>IEN 547 Computer Simulation Systems</td>
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* People and Society (PS)/Humanities and Arts (HA) Electives are selected from a list of approved electives maintained in the department at UM.

** The Technical Elective is selected from courses at the 300 level or above, offered by one of the following departments: MTH, BME (except BME 320), CAE, ECO, EEN, IEN, MEN, ACC, FIN, MGT(Except MGT 303), MAS, MKT.

*** IEN Electives are selected from courses at the 300 level or above, offered by the Department of Industrial Engineering.

INDUSTRIAL ENGINEERING CONCENTRATIONS

- Engineering Management Concentration
- Manufacturing Engineering Concentration
- Pre-Medical Concentration
## BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING

### ENGINEERING MANAGEMENT CONCENTRATION (125 Credits)

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# Bachelor of Science in Industrial Engineering

## Manufacturing Engineering Concentration (125 Credits)

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<td>CHM 153 Chemistry Laboratory for Engineers</td>
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### Junior Year

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<td>IEN 351 Industrial Safety Engineering</td>
<td>IEN 363 Project Management for Engineers</td>
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<td>IEN 380 Engineering Economy</td>
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<tr>
<td>IEN 441 Deterministic Models in Operations Research</td>
<td>IEN 407 Product Design for Manufacturing</td>
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### Senior Year

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<td>IEN 505 Robotics</td>
<td>IEN 507 Design of Manufacturing Systems</td>
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<td>IEN 512 Statistical Quality Control and Quality Management</td>
<td>IEN 509 Automated Assembly</td>
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<td>IEN 524 Decision Support Systems in IE</td>
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<tr>
<td>IEN 557 Ergonomics and Human Factors Engineering</td>
<td>IEN 568 Materials Handling and Facilities Planning</td>
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* People and Society/Humanities and Arts Electives are selected from a list of approved electives maintained in the department at UM.
BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING
PRE-MEDICAL CONCENTRATION (135 Credits)

| FRESHMAN YEAR | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| **Fall Semester** | **Spring Semester** | | | | | |
| IEN 111 Introduction to Engineering I | 3 | IEN 112 Introduction to Engineering II | 2 | | | |
| ENG 105 English Composition I | 3 | ENG 107 Writing about Science | 3 | | | |
| MTH 151 Calculus I for Engineers | 5 | MTH 162 Calculus II | 4 | | | |
| PHY 205 University Physics I | 3 | CHM 111 Principles of Chemistry I | 3 | | | |
| ECO 211 Economic Principles and Problems | 3 | CHM 113 Chemistry Laboratory I | 1 | | | |
| | 17 | PHY 206 University Physics II | 3 | | | |
| | | PHY 208 University Physics II Lab | 1 | | | |

| SOPHOMORE YEAR | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| **Fall Semester** | **Spring Semester** | | | | | | |
| BIL 150 General Biology | 4 | BIL 160 Evolution and Biodiversity | 4 | | | |
| BIL 151 General Biology Lab | 1 | BIL 161 Evolution and Biodiversity Lab | 1 | | | |
| CHM 112 Principles of Chemistry II | 3 | COS 211 Public Speaking | 3 | | | |
| CHM 114 Chemistry Laboratory II | 1 | ECO 212 Economic Principles and Problems | 3 | | | |
| IEN 201 Methods Analysis & Project Management | 3 | Humanities and Arts Elective* | 3 | | | |
| MTH 210 Vectors and Matrices | 3 | MTH 311 Ordinary Differential Equations | 3 | | | |
| PHY 207 University Physics III | 3 | PHY 209 University Physics III Laboratory | 1 | | | |
| | 18 | | | | | | |

| JUNIOR YEAR | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| **Fall Semester** | **Spring Semester** | | | | | | |
| CHM 201 Organic Chemistry I (Lecture) | 3 | CHM 202 Organic Chemistry II (Lecture) | 3 | | | |
| CHM 205 Organic Chemistry Laboratory I | 1 | CHM 206 Organic Chemistry Laboratory II | 1 | | | |
| IEN 310 Introduction to Engineering Probability | 3 | IEN 312 Applied Statistical Methods | 3 | | | |
| IEN 351 Industrial Safety Engineering | 3 | IEN 361 Industrial Cost Analysis | 3 | | | |
| IEN 380 Engineering Economy | 3 | IEN 363 Project Management for Engineers | 3 | | | |
| IEN 441 Deterministic Models in Operations Research | 3 | IEN 442 Stochastic Models in Operations Research | 3 | | | |
| | 16 | | | | | | |

| SENIOR YEAR | | | | | | | |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| **Fall Semester** | **Spring Semester** | | | | | | |
| IEN 465 Production and Inventory Control | 3 | IEN 406 Computer-Aided Manufacturing | 3 | | | |
| IEN 512 Statistical Quality Control and Quality Management | 3 | IEN 494 Senior Project | 3 | | | |
| IEN 547 Computer Simulation Systems | 3 | IEN 513 Quality Management in Service Organizations | 3 | | | |
| IEN 557 Ergonomics and Human Factors Engineering | 3 | IEN 524 Decision Support Systems in IE | 3 | | | |
| Advanced PS/HA Elective* | 3 | IEN 568 Materials Handling and Facilities Planning | 3 | | | |
| Advanced PS/HA Elective* | 3 | | | | | | |
| | 18 | | | | | | |

* People and Society (PS)/Humanities and Arts (HA) Electives are selected from a list of approved electives maintained in the department at UM.
FIVE-YEAR BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING AND MASTER OF SCIENCE IN INDUSTRIAL ENGINEERING (FIVE-YEAR BSIE/MSIE PROGRAM)

This program is specifically designed for those students who want to pursue their graduate study as soon as they complete their undergraduate study in Industrial Engineering. The special conditions for this Five-Year BSIE/MSIE Program are as follows:

1. The student must declare his/her intent to participate before the end of the Junior year by submitting an official application to the department graduate committee for admission into the MSIE portion of the program. Exceptions to this rule must be approved by the department faculty.

2. A student wishing to withdraw from the Five-Year Program without the MSIE degree must complete all the requirements for the BSIE program, including the IEN 494 Senior Project in order to get his/her BSIE degree.

3. To qualify for the MSIE degree, the student must meet all the pertinent Graduate School requirements, including an acceptable score on the GRE (Graduate Record Examination) and a minimum of 3.0 GPA.

4. The student is awarded both the BSIE and MSIE degrees at the end of the fifth year when all undergraduate and graduate requirements are satisfied.

FIVE-YEAR BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING
AND
MASTER OF SCIENCE IN INDUSTRIAL ENGINEERING

<table>
<thead>
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<th>FRESHMAN YEAR</th>
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<td>Fall Semester</td>
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<td>ECO 212 Economic Principles and Problems</td>
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<td>IEN 201 Methods Analysis &amp; Work Measurements</td>
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<td>IEN 361 Industrial Cost Analysis</td>
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## SENIOR YEAR

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<td>IEN 612 Design of Experiments</td>
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<td>IEN 642 Linear Programming and Extensions</td>
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* People and Society/Humanities and Arts Electives are selected from a list of approved electives maintained in the department at UM.

** The Technical Elective is selected from courses at the 300 level or above, offered by one of the following departments: MTH, BME (except BME 320), CAE, ECO, IEN, MEN, ACC, FIN, MGT(Except MGT 303), MAS, MKT.

*** IEN Electives are selected from courses at the 300 level or above, offered by the Department of Industrial Engineering.

**** IEN Electives are selected from courses at the 500 or 600 level, offered by the Department of Industrial Engineering.
# FIVE-YEAR BACHELOR OF SCIENCE IN INDUSTRIAL ENGINEERING
(ENGINEERING MANAGEMENT CONCENTRATION)
AND
MASTER OF SCIENCE IN INDUSTRIAL ENGINEERING

## FRESHMAN YEAR

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## SOPHOMORE YEAR

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## JUNIOR YEAR

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## FIFTH YEAR

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</table>

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** IEN Electives are selected from courses at the 500- or 600-level, offered by the Department of Industrial Engineering.
MINOR

INDUSTRIAL ENGINEERING MINOR
A student majoring in another discipline who chooses to take a minor in Industrial Engineering must complete 15 credits of coursework consisting of the following:
IEN 201
IEN 351
IEN 380 and
Any two 300, 400 or 500 level IEN courses

Substitutions may be accepted with the permission of the Department Chairman.

Industrial Engineering Course Listing
MECHANICAL AND AEROSPACE ENGINEERING - Dept. Code: MAE
http://www.mae.miami.edu

INTRODUCTION

Engineering is the art of applying the knowledge of science for the benefit of humanity. Mechanical Engineering is the most broadly based area of engineering. It is concerned with the analysis, design, development and application of equipment for such diverse fields as energy conversion, transportation, production machinery, consumer goods, and environmental control. Today’s advanced technology is largely a result of the skill of mechanical engineers who are heavily represented in most fields of modern industry.

Because of the varied careers and opportunities which are available to the Mechanical Engineering graduates, the curriculum emphasizes education in the fundamentals of the physical, mathematical, and engineering sciences, including materials science, solid mechanics, fluid mechanics and thermodynamics. These basic subjects are followed by courses in their application to the design and analysis of engineering devices and systems. The available mini- and micro-computers are utilized for analysis and design throughout the curriculum.

Aerospace Engineering is concerned with the analysis, design and development of a wide variety of aircraft and space vehicles and systems. The undergraduate aerospace engineering program is designed to provide a broad based foundation in aeronautics and astronautics, including topics such as aerodynamics, propulsion, aerospace structures and materials, flight dynamics, control and performance.

In the junior and senior years, the student is assisted in choosing technical electives in preparation for a degree of professional specialization or for further study in engineering, law, business or medicine. With the aid of an advisor and the concurrence of the department chairman, the student may select courses compatible with a variety of career goals.

The department offers two undergraduate degrees: Bachelor of Science in Mechanical Engineering and Bachelor of Science in Aerospace Engineering. Within the Bachelor of Science in Mechanical Engineering program, sequences of courses are available to provide advanced knowledge in such traditional areas as electromechanical design, heat transfer, applied mechanics, fluid mechanics, materials science, and nuclear engineering. There are concentrations in Aerospace Engineering, Environmental Engineering, Energy Engineering, Automobile Engineering, Combustion Engines/Exhaust Emissions, and Heating, Ventilation and Air Conditioning. In addition, a Biomedical Engineering concentration is offered in conjunction with the Department of Biomedical Engineering and the Medical School.

MISSION STATEMENTS

Mission of Mechanical and Aerospace Engineering Department
The mission of the Department of Mechanical and Aerospace Engineering is to provide excellent undergraduate education in aerospace engineering and undergraduate and graduate education in mechanical engineering that will prepare graduates to meet Society’s changing needs and aspirations.
Mission of the Mechanical Engineering Program
The mission of the Mechanical Engineering program is to provide excellent undergraduate education in Mechanical Engineering that will prepare graduates to meet society’s changing needs and aspirations.

Mission of the Aerospace Engineering Program
The mission of the Aerospace Engineering program is to provide excellent undergraduate education in Aerospace Engineering that will prepare graduates to meet society’s changing needs and aspirations.

EDUCATIONAL OBJECTIVES

The objectives of the mechanical engineering program are to educate engineers who:

(1) have a sound background in the fundamentals of engineering
(2) have the abilities and knowledge expected by industry
(3) are prepared for entry-level jobs in mechanical engineering
(4) are prepared for graduate work in mechanical engineering

The objectives of the aerospace engineering program are to educate engineers who:

(1) have a sound background in the fundamentals of engineering
(2) have the abilities and knowledge expected by industry
(3) are prepared for entry-level jobs in aerospace engineering
(4) are prepared for graduate work in aerospace engineering

GRADUATE STUDIES
Graduate programs leading to the degrees of Master of Science and Doctor of Philosophy are offered by the Department with options in various engineering and interdisciplinary fields. Detailed information is available in the Bulletin of the Graduate School.
## DEGREE PROGRAMS

### MECHANICAL ENGINEERING CURRICULUM (126 credits)

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<tr>
<th>FRESHMAN YEAR</th>
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<tr>
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<td>ENG 105 English Composition I</td>
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# AEROSPACE ENGINEERING CURRICULUM (126 CREDITS)

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## Concentrations in Mechanical Engineering

### Aerospace Engineering Concentration

The mission of the aerospace engineer is to design and manufacture payload carrying vehicles to travel distances at the lowest cost in the shortest period of time. The training of the aerospace engineer is by demand multidisciplinary and by spirit pioneering. It includes aerodynamics, propulsion, advanced materials, structures, controls, robotics, electronics and computer usage.

An option has been developed to allow students at the University of Miami to have a concentration of courses in Aerospace Engineering. This concentration in aerospace is built on the existing accredited degree program in Mechanical Engineering.

See Aerospace Engineering Concentration Curriculum.
Energy Engineering Concentration
This concentration provides the fundamentals and applications of various aspects of energy such as solar, hydrogen, electric and nuclear energy sources; energy conversion; internal combustion engines; and energy utilization in heating, ventilating, air conditioning and refrigeration systems. The technical electives related to this concentration include MAE 408, MAE 420, MAE 503, MAE 508, MAE 509, MAE 510, MAE512, MAE 514, MAE 528, MAE 538, MAE 539, and MAE 540. Students can take special project courses in Internal Combustion Engines, Dorgan Solar Energy, Pollution Control, Fluid and Thermal Sciences, and Two-Phase Flow Laboratories.

Biomedical Engineering Concentration
This concentration is built around a 9-credit course sequence which has been developed to familiarize graduate and advanced undergraduate students with the rudiments of anatomy, physiology, biochemistry, and clinical medicine. Completion of the program is intended to aid the student in pursuing a career in medicine or in engineering and design in such areas as extracorporeal life-support systems and prosthetic devices.

The student should take Chemistry 201 as a prerequisite to Biomedical Engineering 501 and 502, Unified Medical Sciences I and II. These Biomedical Engineering courses satisfy the requirements for electives in the Mechanical Engineering Program, but under current regulations, the student will require 131 credits to graduate.

Automotive Engineering Concentration (Internal Combustion Engines)
This program is designed to acquaint the mechanical engineering student with the fundamental science and engineering underlying the design of both conventional and high performance internal combustion engines and the fundamentals of emission formation in combustion systems, automobile mechanisms and structures including vibrations and noise. Included are studies of conventional fuels and synthetic fuels of the future such as hydrogen and methanol.

Technical Electives are MAE 503, 514 and 521.

Environmental Engineering Concentration
In the students junior and senior years he or she should select three People and Society/Humanities and Arts electives from List A below, including one of the 500-level courses, and two Technical Electives from List B.

<table>
<thead>
<tr>
<th>List A</th>
<th>List B</th>
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<tr>
<td><em>Socio-Humanistic elective sequences recommended:</em></td>
<td><em>Technical electives recommended:</em></td>
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<tr>
<td>ECO 211, 212</td>
<td>MAE 408, 503, 508, 512, 521, 520</td>
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<td>MAS 547</td>
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<td>BIL 150, 160</td>
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HVAC Systems Concentration
This concentration is offered to specialize the mechanical engineering student with the theory and applications of HVAC systems. At least the HVAC Technical Electives MAE 408, MAE 508, and MAE 539 should be selected. The design project for MAE 442-443 will involve air-conditioning component and system design.
Sustainable Engineering Concentration
The Sustainable Engineering concentration focuses on engineering that maximizes the benefits of technology to society while it minimizes the non-renewable resources utilized and the associated impact on the environment of producing and disposing of that technology. Projects in the design courses MAE 342, MAE 441 and MAE 442-443 will focus on Sustainable Engineering, and there will be a Special Project in the laboratory course MAE 404.

Other Concentrations
Concentrations may also be elected in electro-mechanical design, heat transfer, fluid mechanics, solid mechanics, computer aided design, nuclear engineering, materials science and chemical technology by judicious selection of technical electives.

MECHANICAL ENGINEERING CURRICULUM

AEROSPACE ENGINEERING CONCENTRATION (129 credits)

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DUAL-DEGREE PROGRAM

A dual-degree program leading to the two degrees, Bachelor of Science in Aerospace Engineering and Bachelor of Science in Mechanical Engineering, is available as per the following curriculum.

BACHELOR OF SCIENCE IN AEROSPACE ENGINEERING AND BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING CURRICULUM (147 CREDITS)

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The five-year BS/MS program leads to both the B.S. degree and the M.S. degree in Mechanical Engineering in five years. The program is intended for exceptional students who are admitted to the graduate program in their junior year. Students applying for this program must have a grade point average of at least 3.0 and must attain a score of more than 1000 on the Graduate Record Examination (taken before the fifth year). The curriculum requirements for this program are as follows:

**BACHELOR of SCIENCE and MASTER of SCIENCE in MECHANICAL ENGINEERING**

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<tr>
<td>MAE 111 Introduction to Engineering I</td>
<td>MAE 112 Introduction to Engineering II</td>
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<td>ENG 105 English Composition I</td>
<td>CAE 210 Mechanics of Solids I</td>
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<td>MTH 151 Calculus I for Engineers</td>
<td>ENG 107 Writing about Science</td>
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<td>PHY 205 University Physics I</td>
<td>MTH 162 Calculus II</td>
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<td>PHY 208 University Physics II Lab</td>
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<td><strong>Fall Semester</strong></td>
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<td>MAE 207 Mechanics of Solids II</td>
<td>MAE 202 Dynamics</td>
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<td>IEN 311 Applied Probability and Statistics</td>
<td>MAE 241 Measurements Lab</td>
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<td>MTH 211 Calculus III</td>
<td>EEN 205 Principles of Electrical Engineering I</td>
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<td>PHY 207 University Physics III</td>
<td>CHM 151 Chemistry for Engineers I</td>
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<td>PHY 209 University Physics III Lab</td>
<td>CHM 153 Chemistry Laboratory for Engineers</td>
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<td>ECO 211 or ECO 212</td>
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<td><strong>Fall Semester</strong></td>
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<tr>
<td>MAE 302 Mechanical Behavior of Materials</td>
<td>MAE 301 Engineering Materials Science</td>
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<tr>
<td>MAE 303 Thermodynamics I</td>
<td>MAE 310 Heat Transfer</td>
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<td>MAE 309 Fluid Mechanics</td>
<td>MAE 342 Mechanical Design II</td>
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<td>MAE 341 Mechanical Design I</td>
<td>MAE 351 Mechanics Laboratory</td>
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<td>MTH 311 Ordinary Differential Equations</td>
<td>MAE 362 Computer Aided Design</td>
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<td>MAE 404 Experimental Engineering Laboratory</td>
<td>MAE 415 Automatic Control</td>
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<td>MAE 412 System Dynamics</td>
<td>500 Level Technical Elective**</td>
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<td>MAE 441 Design of Fluid and Thermal Systems</td>
<td>PS/HA Elective*</td>
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<td>Energy Elective***</td>
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<td>500 Level Technical Elective**</td>
<td>MAE Technical Elective **</td>
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<tr>
<td><strong>Fall Semester</strong></td>
<td><strong>Spring Semester</strong></td>
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<tr>
<td>MAE 501 Methods of Engineering Analysis</td>
<td>MAE 507 Advanced Mechanics of Solids</td>
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<td>MAE 512 Intermediate Fluid Mechanics</td>
<td>MAE 508 Intermediate Heat Transfer</td>
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<td>600 Level Technical Elective**</td>
<td>MAE 652 Masters Capstone Project</td>
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<td>600 Level Technical Elective**</td>
<td>MAE 614 Computational Fluid Dynamics</td>
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* People and Society (PS)/Humanities and Arts (HA) Electives are selected from the appropriate table found in this Bulletin in the College of Engineering section.

** Technical Electives are advanced courses in mathematics, science or engineering, approved by the Faculty Advisor, as appropriate for individual objectives.

*** Applied Thermodynamics Electives are selected with approval of Faculty Advisor, e.g., MAE 408, MAE 420, MAE 503, MAE 506, MAE 509, MAE 510, MAE 528, MAE 540, MAE 570.
MINOR

MECHANICAL ENGINEERING MINOR

A student in the College of Arts and Sciences choosing the general field of mechanical engineering as a minor must complete 15 credits consisting of the following:

1. A core of CAE 210 and MAE 111.

2. Nine additional credits of Mechanical Engineering electives. These nine credits must be chosen from one of the following areas of specialization:
   d. Thermal Engineering: MAE 303, MAE 310, MAE 408, MAE 420, MAE 441, MAE 503, MAE 508, MAE 510.

[Link to Mechanical and Aerospace Engineering Course Listing]
DOROTHY H. AND LEWIS ROSENSTIEL
SCHOOL OF MARINE AND ATMOSPHERIC SCIENCE
UNDERGRADUATE

www.rsmas.miami.edu/academics/undergraduate

INTRODUCTION

The Rosenstiel School of Marine and Atmospheric Science was established in 1943 as the Marine Laboratory of the University of Miami. It has grown from its modest beginnings in a boathouse to be one of the nation’s leading institutions for oceanographic and atmospheric research and education.

Originally a tropical marine biological facility, the Marine Laboratory initiated a program of studies leading to the Master of Science degree in 1949. In 1953, laboratory and classroom buildings were constructed on the School's present campus on Virginia Key, and in the late fifties, the Marine Laboratory expanded its staff and developed its oceanographic capabilities in response to the increased interest in scientific research in the United States. It became the Institute of Marine Science in 1961. Ocean-going research vessels were acquired and additional buildings were constructed to accommodate new wide-ranging projects. In 1969, the Institute, now a School, was named for Dorothy H. and Lewis Rosenstiel in recognition of a major contribution, made through the Rosenstiel Foundation, to encourage progress in the marine and atmospheric sciences at the University of Miami. In 1977, the Rosenstiel School and College of Arts and Sciences joined together to establish an undergraduate Marine and Atmospheric Science program based on the Coral Gables campus. The degree granting authority for this program was formally transferred to the Rosenstiel School in 2008.

Today the Rosenstiel School has a faculty of 100 scientists who conduct sponsored research while offering studies leading to the Bachelor of Science, Bachelor of Arts, Master of Arts, Master of Science and Doctor of Philosophy degrees.

Government agencies and private organizations support basic and applied research at the Rosenstiel School. Graduate and undergraduate students are an integral part of the research effort, and research programs, many multidisciplinary in nature, provide the environment within which professors and students interact.

The Rosenstiel School has modern laboratory facilities and a state-of-the-art catamaran, unrivaled worldwide for both shallow and deep water research. The vessel, named the F. G. WALTON SMITH, in honor of the founder of the Rosenstiel School, signals a new era in scientific research.

MISSION

The Rosenstiel School strives to be in the forefront of basic and applied research as it applies to the ocean, atmosphere and global environment, with particular emphasis on subjects of societal significance. Our goal is to provide excellence in graduate and undergraduate education and research training, and to be a strong force towards improved environmental understanding and management.
ACADEMIC POLICIES

Admission

Applications for incoming freshmen are processed and reviewed by the Office of Admission. Enrollment in the Undergraduate Marine Science and Atmospheric Science Programs is selective and highly competitive. Admission decisions are based on the secondary school record, SAT/ACT score, counselor’s evaluation and the applicant’s essay.

Student Responsibilities

Students of the Rosenstiel School are responsible for planning their own programs and for meeting degree requirements. It is the student’s responsibility to understand and fully comply with all the provisions set forth in this Bulletin and written changes to their program of study.

Academic Progress

The Rosenstiel School will review each student’s record at the end of each semester. All students in the Undergraduate Marine and Atmospheric Science Program must maintain a cumulative grade point average of 2.5 or better in order to remain in the program. Only those courses passed with a grade of C- or better may be applied to the major or minor.

DEGREE PROGRAMS

The Rosenstiel School of Marine and Atmospheric Science offers degree programs on both the undergraduate and graduate levels for students interested in marine and atmospheric science as a career.

UNDERGRADUATE DEGREE PROGRAMS

The Atmospheric Science program offers a Bachelor of Science in Marine and Atmospheric Science degree in Meteorology, with a curriculum conforming to the recommendations of the American Meteorological Society. The BS in Meteorology is a single major program, though students often combine meteorology with a second major in mathematics or physics, among others. A double major combining meteorology and broadcast journalism through the School of Communications is a popular option.

The Rosenstiel School Marine Science program offers two undergraduate degree options, a Bachelor of Science in Marine and Atmospheric Science and a Bachelor of Arts in Marine Affairs. The Bachelor of Science degree program is meant for students planning to continue with graduate studies in marine science, or for those who will pursue a technical career in this area in government or private industry.

The Bachelor of Arts degree is designed for students planning either non-technical careers with government agencies or private industries directly or indirectly concerned with the ocean, or graduate studies in such areas as business, law, economics, political science, education, or communication.
In cooperation with the graduate program in Marine Affairs and Policy, a five-year BA/MPS program in Marine Affairs is available. This program enables qualified students to earn a Bachelor of Arts in Marine Affairs in four years with the opportunity to earn a Master of Professional Science in Marine Affairs with only one additional year.

**GRADUATE DEGREE PROGRAMS**

Graduate courses in the marine and atmospheric sciences are offered through the Graduate School and the Rosenstiel School of Marine and Atmospheric Science and are listed under the following divisional headings of the Rosenstiel School graduate programs entry in the Bulletin:

- Applied Marine Physics
- Marine and Atmospheric Chemistry
- Marine Biology and Fisheries
- Marine Geology and Geophysics
- Meteorology and Physical Oceanography
- Marine Affairs and Policy

Courses at the 500-level may be taken for undergraduate credit with junior standing and departmental consent.
UNDERGRADUATE MAJORS

ATMOSPHERIC SCIENCE PROGRAM – Dept. Code: ATM

METEOROLOGY

Meteorology is the study of the atmosphere, including climate and climate variability, weather forecasting, cloud and precipitation physics, tropical dynamics, severe weather and hurricanes. Atmospheric scientists use computer models and sophisticated observing systems to describe and understand the atmosphere. The curriculum emphasizes math and physics basics, providing a strong foundation for an intensive study of meteorology. The curriculum, conforming to the recommendations of the American Meteorological Society, prepares students for graduate school and for jobs in industry and government.

The Rosenstiel School offers a Bachelor of Science in Marine and Atmospheric Science with a major in Meteorology. In addition to the General Education Requirements, the following courses are required for the Meteorology major:

Atmospheric Science (32 credits):
ATM103, ATM111, ATM118, ATM243, ATM303, ATM305, ATM405, ATM406, ATM407, ATM409, and either ATM220 or ATM307.

Mathematics (20 credits)*:
MTH161, MTH162, MTH210, MTH224, MTH310, and MTH311**
*Double majors in CBR must take either MTH224 or MTH311, but are not required to take both.
**Students may substitute MTH320 for MTH311.

Physics and Chemistry (14 credits):
PHY205, PHY206, PHY207, PHY208. CHM111, CHM113.

Computer Science (4 credits):
CSC120 or suitable elective.

One free elective in Atmospheric Science, Mathematics or science (3 credits).

Six credits of upper level elective, to be approved by advisor.

Although Meteorology is approved as a single major program, students often combine Meteorology with a second major in such diverse fields as mathematics, marine science or broadcast journalism. Sample curricula can be found at www.meteorology.miami.edu.
METEOROLOGY/MATHEMATICS (Applied Analysis)

A double major in Meteorology and Mathematics (Applied Analysis) provides an excellent foundation for students who want to pursue graduate degrees in meteorology and related fields. The double major curriculum is as follows:

Atmospheric Science (29 credits):
ATM103, 118, 243, 303, 305, 405, 406, 407, 409, and either 220 or 307.

Mathematics (35 credits):
MTH161 and 162 or 171 and 172, 210, 230, 310, 311, 461 (or 561), 433 (or 533), 512, and one of the following two course sequences: 513 and 514, or 515 and 516.

Physics and Chemistry (14 credits):
PHY205, PHY206, PHY207, PHY208. CHM111, CHM113.

Six credits of upper level elective, to be approved by advisor.

MINOR in Meteorology

A Bachelor of Science minor in Meteorology requires the following courses: ATM103, ATM118, ATM220, ATM243, ATM303 and ATM306. Only those courses passed with a grade of “C-” or higher may be applied to the minor.

Atmospheric Science Course Listing
MARINE SCIENCE PROGRAM – Dept. Code: MSC

Marine Science is an interdisciplinary program dealing with the study of the world’s oceans, their physical and biological constituents, the influence of oceanic resources on human society, and the conservation and future development of these resources.

The Bachelor of Science double major in Marine Science prepares students for admission to graduate programs and for careers in teaching and research as well as for technical careers in government and private industries concerned with the oceans. The Bachelor of Science track in Marine Science is a full double major program that requires a major in Marine Science through the Rosenstiel School and a second major in one of the sciences through the College of Arts and Sciences or the College of Engineering. Common double major combinations are marine science/biology, marine science/chemistry, marine science/geology, marine science/physics, and marine science/computer science. Second majors in Applied Physics, Biochemistry, Engineering (all disciplines), Mathematics and Microbiology are also possible. Each of the areas of concentration constitutes a rigorous program requiring 120-130 credits for graduation.

In addition to the courses that fulfill the General Education Requirements, the required courses for each area of concentration are:

Marine Science/Biology

- Marine Science 111, 215, 216, 230, 232, 301, and 12 credits of elective in Marine Science, at least 6 of which must be at the 300-level or higher. MSC 204 does not satisfy the MSC elective requirement but does satisfy the Statistics requirement.
- Biology 150, 151, 160, 161, 250, 255, 330, 360 and 12 credits of elective as described for Biology majors
- (Marine Science 230 and one advanced biology course may fulfill requirements in both Biology and Marine Science)
- Chemistry 111, 112, 113, 114, 201, 202, 205, 206
- Geological Sciences 110 and 114, or 111
- Mathematics 161-162, one semester of a computer or statistics course. The following classes are approved to satisfy the computer/statistics requirement: MSC 204, BIL 311, CSC 120, MTH 224, or PSY 204.
- Physics 205, 206, 207, and either 208 or 209; or Physics 101, 102, 106 and 108 (University Physics is recommended)
- Six credits of upper level elective, to be approved by advisor.
Marine Science/Chemistry

- Marine Science 111, 215, 216, 230, 232, 301, and 12 credits of elective in Marine Science, at least 6 of which must be at the 300-level or higher. MSC 204 does not satisfy the MSC elective requirement but does satisfy the Statistics requirement.

- Biology 150, 151 or 160, 161

- Chemistry 111, 112, 113, 114, 201, 202, 205, 206, 304, 316, 320, 360, 364, 365, and one of CHM 401, 441, 520, 563 or BMB 401 or 506 as described for Chemistry majors

- Geological Sciences 110 and 114, or 111

- Mathematics 161-162, one semester of a computer or statistics course. The following classes are approved to satisfy the computer/statistics requirement: MSC 204, MTH 224, CSC 120 or EEN 118.

- Physics 205, 206, 207, and either 208 or 209

- Six credits of upper level elective, to be approved by advisor.

Marine Science/Geological Sciences

- Marine Science 111, 215, 216, 230, 232, 301, and 12 credits of elective in Marine Science, at least 6 of which must be at the 300-level or higher. MSC 204 does not satisfy the MSC elective requirement but does satisfy the Statistics requirement.

- Biology 150, 151 or 160, 161

- Chemistry 111, 112, 113, 114

- Geological Sciences 110, 111, 114, 260, 360, 380, 410 or 420, 440, 480, 482, 580, as described for Geological Sciences majors.

- (One course in Geological Sciences may fulfill requirements in both Marine Science and Geology.)

- Mathematics 161-162, one semester of a computer or statistics course.

- Physics 205, 206, 207, and either 208 or 209

- Six credits of upper level elective, to be approved by advisor.
Marine Science/Physics

- Marine Science 111, 215, 216, 230, 232, 301, and 12 credits of elective in Marine Science, at least 6 of which must be at the 300-level or higher. MSC 204 does not satisfy the MSC elective requirement but does satisfy the Statistics requirement.

- Biology 150, 151 or 160, 161

- Chemistry 111, 112, 113, 114

- Geological Sciences 110 and 114, or 111

- Mathematics 161-162, 210, 311, and one semester of a computer or statistics course.

- Physics 205, 206, 207, 208, 209, 321, 340, 350, 351, 360, 362, 540, 560 as described for Physics majors

- Six credits of upper level elective, to be approved by advisor.

Marine Science/Computer Science

- Marine Science 111, 215, 216, 230, 232, 301, 321 and 9 credits of elective in Marine Science, at least 6 of which must be at the 300-level or higher.

- Biology 150, 151 or 160, 161

- Chemistry 111, 112, 113, 114

- Computer Science 120, 220, 314, 322, 531 and 6 credits of approved elective, as described for Computer Science majors

- Geography 199

- Geological Sciences 110 and 114, or 111

- Mathematics 161-162 and 309

- Physics 205, 206, 207 and one semester of laboratory

- Six credits of upper level elective, to be approved by advisor.
Marine Science with a second major in one of: Applied Physics, Biochemistry, Engineering (all disciplines), Mathematics, Microbiology and Neurosciences

- Marine Science 111, 215, 216, 230, 232, 301, and 12 credits of elective in Marine Science, at least 6 of which must be at the 300-level or higher. MSC 204 does not satisfy the MSC elective requirement but does satisfy the Statistics requirement.

- Biology 150, 151 or 160, 161
- Chemistry 111, 112, 113, 114
- Geological Sciences 110 and 114, or 111
- Mathematics 161-162, and one semester of a computer or statistics course.
- Physics 205, 206, 207, and either 208 or 209; or Physics 101, 102, 106 and 108 (University Physics is recommended)
- Six credits of upper level elective, to be approved by advisor
- Plus all requirements of the second major.

MINOR in Marine Science

A Bachelor of Science minor in Marine Science requires the following courses: Marine Science 111, and 12 credits of Marine Science elective, at least 6 of which must be at the 300-level or higher. MSC 204 does not satisfy the MSC elective requirement for the minor.

Only those courses passed with a grade of “C-” or higher may be applied to the major or minor.
MARINE AFFAIRS

The ocean is acquiring an ever-increasing significance as an avenue of worldwide commerce and communication and as a source of food, energy, minerals and fuels. As nations and private concerns become more involved in the ocean, the need increases for qualified professionals to deal with the commercial and legal complexities of marine affairs. In order to meet this need, the Rosenstiel School offers a Bachelor of Arts degree with a major in Marine Affairs combined with a minor in Anthropology, General Business, Economics, Ecosystem Science and Policy, Geography, International Studies, Latin American Studies, Political Science, or General Business. Students in the School of Communication may include Marine Affairs as a second major. This program is designed for students who wish to prepare themselves for graduate studies and careers in ocean related areas of business, policy, management, law, and communication.

In addition to those courses that satisfy General Education Requirements, the required courses for the undergraduate major in Marine Affairs are:

- Biology 150, 160
- Chemistry 111, 112
- Marine Science 111, 215, 230, 313 or 314, 310 or 340, 345, 460 and six credits of approved elective in marine affairs.
- Geological Sciences 110 or 111
- Economics 211
- One course in computer programming or statistics
- Six credits of upper level elective, to be approved by advisor.

Marine Affairs courses offered through the graduate Marine Affairs and Policy division at the Rosenstiel School may be taken by upperclass students with permission.

5 Year BA/MPS Program in Marine Affairs

The Rosenstiel School offers a 5 year BA/Master of Professional Science (MPS) Program in Marine Affairs. This program enables qualified Marine Affairs students to earn a Bachelor of Arts in Marine Affairs in four years with the opportunity to earn a Master of Professional Science in Marine Affairs in one additional year. Conditional acceptance to the graduate Marine Affairs and Policy Division is based on the student's GPA at the end of the sophomore year. Students must then apply for acceptance to the graduate program at the Rosenstiel School during their junior year.
HONORS

Honors in the Marine and Atmospheric Science Program may be earned by students who have a 3.5 GPA and have completed 6 credits of independent research and a senior thesis.

REQUIREMENTS FOR GRADUATION

In addition to satisfying the course requirements for graduation with majors in Marine Science, Meteorology and Marine Affairs (specified above under “Undergraduate Majors”), students are expected to satisfy the School’s General Education Requirements. General Education Requirements stress breadth of knowledge and the cultivation of intellectual abilities essential for the acquisition of knowledge. Courses taken for the major, the minor, and the writing requirement may also be used to satisfy the General Education Requirements.

AREAS OF PROFICIENCY

A)  English Composition:  3-6 credits

Students (except those first enrolling in English 103) must take English 105 and 106, or their approved equivalents, in the first year of residence.

Students with an appropriate score on the Advanced Placement [AP] language and literature examination, or with an appropriate score on the International Baccalaureate [IB] higher level English examination, may earn 6 credits in English 105 and English 106. Those with an appropriate score on the SAT verbal or ACT verbal exams may be exempted from English 105. Those with transfer credit for English 105 will take English 106 or its equivalent in the first year of residence.

B)  Writing Across the Curriculum

Every student must complete five (5) writing-oriented (W) courses beyond ENG 105 and 106. Students are required to write at least 4000 words in each W course. Writing assignments will be graded on both content and style. All literature and foreign language literature courses receive writing credit. Transfer students must satisfy at least three (3) courses of the writing requirement at the University of Miami.

C)  Mathematics

Bachelor of Arts in Marine Affairs:  3-6 credits
Bachelor of Science in Marine and Atmospheric Science: 11-12 credits

B.S. degree candidates must earn 11-12 credits, consisting of two semesters of Calculus: MTH 161-162, or equivalent and either a) one semester of a computer course approved by the department; or b) a statistics course approved by the department.

B.A. degree candidates who do not place out of MTH 101 must take MTH 101 or MTH 107 during their first year. In addition, all B.A. degree candidates must take one of the following MTH courses: MTH 108, MTH 113, MTH 130, or MTH 161.
AREAS OF KNOWLEDGE

A) People and Society (Social Sciences): 6 credits

Students must earn six credits in the Social Sciences. Courses in the following areas may be used to fulfill this requirement: Africana Studies (AAS); American Studies (AMS); Anthropology (except APY 203); Economics (ECO); Ecosystem Science and Policy (ECS 113 or 302 only); Education and Psychological Studies (EPS); Geography and Regional Studies (except GEG 120); International Studies (INS); Judaic Studies (JUS); History (HIS); Political Sciences (POL); Psychology (PSY); Sociology (SOC); Teaching and Learning (TAL); Women’s and Gender Studies (WGS), and the following courses: Broadcasting and Broadcast Journalism (CEM 102); Mass Media Communication in Society (COM 101); Communication Theory (COM 110); Interpersonal Communication (COS 112); Nonverbal Communication (COS 118); Political Communication (COS 336); Persuasion (COS 472).

One approved First Year Seminar course may be taken for the Social Sciences requirement.

B) Arts and Humanities: 12 credits

Students must earn twelve credits from among the four areas listed below. No more the six credits may be earned in any one area.

Fine Arts: courses in the departments of Art and Art History, Dance (DAN 250 only), Musicology, Music Theory (MTC 125 only), and Theatre Arts (THA 101 only) count toward this requirement.

Literature: literature courses in the departments of English (200-level and higher), Modern Languages and Literatures (300-level and higher) and Classics (CLA 220, CLA 310, CLA 311 and CLA 370) count toward this requirement.

Modern or Classical Languages: modern language courses numbered 101-212, or courses in Greek or Latin, count towards this requirement so long as the language differs from the student’s native language, and if, when beginning with a 101-level course, they also take the 102-level course in the same language.

Philosophy and Religious Studies: courses in the departments of Philosophy and Religious Studies count toward this requirement.

One approved First Year Seminar course may be taken for the Arts and Humanities requirement.

C) Natural World (Natural Science)

Bachelor of Arts in Marine Affairs: 9 credits
Bachelor of Science in Marine and Atmospheric Science: 4-8 credits

B.A. degree candidates must earn nine credits in two of the following disciplines: Biology, Chemistry, Ecosystem Science and Policy (except ECS 113 and 302), Geological Sciences, Marine Sciences, Physical Sciences, and Physics. APY 203 and/or GEG 120 may also be taken for this requirement.
B.S. degree candidates minoring in one of the subjects approved as a B.S. major must earn 4 credits, and those minoring in other subjects must earn 8 credits, in one of the following departments: Biology, Chemistry, Geological Sciences or Physics. These credits must be taken in a department other than the major or the minor, and must be earned in courses that count toward a major in that department.

[Marine Science Course Listing]
INTRODUCTION

The University of Miami Frost School of Music awards the Bachelor of Music degree with majors in nine areas: Composition, Performance, Music Education, Music Engineering Technology, Music Business and Entertainment Industries, Music Therapy, Studio Music and Jazz, and Bachelor of Science in Music Engineering.

The Bachelor of Arts in music degree is a non-professional degree designed for talented musicians who wish to pursue a broad liberal arts education. Curriculum flexibility affords students the opportunity for a variety of pre-professional studies, including premedical and prelegal. A minor outside the Frost School of Music is required. A second major outside the School of Music can sometimes be pursued.

The Master of Music is offered with majors in Music Education, Music Therapy, Theory, Composition, Performance (voice, piano, conducting, harp, woodwind, multi-woodwinds, brass, percussion, and stringed instruments), Musicology, Accompanying and Chamber Music, Jazz Performance, Jazz Pedagogy, Music Business and Entertainment Industries, Studio Jazz Writing, Media Writing and Production. A joint Doctor of Jurisprudence (JD) and Masters in Music Business and Entertainment Industries is offered jointly with the School of Law. Music Engineering Technology is offered by the School of Music as a Master of Science Degree.

The Doctor of Philosophy degree in Music Education and the Doctor of Musical Arts degree also are offered. Refer to the appropriate section of the Graduate Bulletin for policies concerning admission, course of study, residence, research, tool requirements, examinations, candidacy, and dissertation/final project requirements.

MISSION

As one of the most comprehensive music units in American higher education, and as a free-standing school within a major research university, the Frost School of Music perpetuates a historic commitment to the values inherent in the juxtaposition of professional and general studies in undergraduate curricula. The comprehensiveness of the School’s undergraduate and graduate programs manifests a philosophy that places importance upon establishing and maintaining connections between its instructional and associated activities and the broad spectrum of music and music-related fields for which it seeks to prepare its students.

In broadest terms, the four-fold mission of the Frost School of Music is to provide a high quality music education and training for its undergraduate and graduate majors; foster advancements in music performance, creativity, scholarship, and teaching among its faculty; serve the general student population of the University; and act as an educational and cultural resource for the University, South Florida, and as appropriate, for national and international constituencies.
ACCREDITATION

The Frost School of Music has been a member of the National Association of Schools of Music since 1939. The requirements for entrance and for graduation as set forth in this Bulletin are in accordance with the published regulations of this Association.

GOALS

The primary goals are:

1. to provide music majors with a high quality pre-professional education,

2. to provide opportunities for other University students to increase their musical skill, understanding, and appreciation,

3. to provide the music faculty with opportunities for creative activity and scholarly inquiry, and

4. to serve as an educational and cultural resource for the University, South Florida, and global communities.

PHYSICAL FACILITIES


Henry Fillmore Band Hall (1958) has a rehearsal hall, uniform and instrument storage, the band library, offices, and the Henry Fillmore Museum.

Nancy Greene Hall (1960) contains a rehearsal hall, studio-offices, and ensemble library.

The Percussion Building (1968) is the percussion teaching studio and office.

The Bertha Foster Memorial Music Building (1960, with second story addition completed in 1970), contains practice rooms and teaching studios, pipe organ studio, an electronic music laboratory, and two studios equipped for audio and video recording.

The Gusman Concert Hall (1975) houses the administrative offices, data processing center, and the Music Engineering Technology center. The 600 seat sound chamber is one of the finest concert facilities in the Southeast.

The L. Austin Weeks Center for Recording and Performance (1994) contains the 150 seat Victor E. Clarke Recital Hall, featuring adjustable acoustics, a pre-function area, a green room, and a state-of-the-art recording studio. The recording area of the building features 48-track digital recording capabilities with a computer automated console, and a multimedia workstation.

The Marta and Austin Weeks Music Library and Technology Center (2005) contains a 15,300 square-foot library which houses collections of books, scores, recordings, special collections, reference works, and computer facilities. The 5,200 square-foot advanced technology center contains six labs, each servicing a specific program for higher-level work, including a music engineering lab, two keyboard/computer labs, a multimedia instruction and learning lab, an
electronic and computer music lab, and a media-writing and production lab.

PERFORMING ENSEMBLES

Through regular rehearsals and public concerts, ensembles provide performing experience for all students on the University of Miami campus. Membership in each of these performing ensembles is based on auditions. Students interested in instrumental music may participate in any of the following:
Accompanying
American Music Ensemble (Songwriters)
Avant Garde Ensemble
“Band of the Hour” Marching Band
Bluegrass Ensemble
Blues Ensemble
Brass Chamber Music
Brass Choir
Clarinet Choir
Classical Guitar Ensemble
Concert Jazz Band
Contemporary Music Ensemble
E.C.M. Ensemble
Electronic Music Ensemble
Flute Choir
Funk/Fusion Ensemble
Horace Silver Ensemble
Jazz Bass Ensemble
Jazz Guitar Ensemble
Jazz Keyboard Ensemble
Jazz Saxophone Ensemble
Laptop Ensemble
Mallet Ensemble
Monk/Mingus Ensemble
Percussion Chamber Music
Rock Ensemble
Salsa Ensemble
Saxophone Ensemble
Small Jazz Ensembles
String-Keyboard Chamber Music
Studio Jazz Band
Studio Rhythm Section
Symphonic Winds
Symphony Orchestra
Synthesizer Ensemble
The Other Music Ensemble
Trombone Choir
Tuba Ensemble
University Band
Wind Ensemble
Woodwind Chamber Music
Jazz Band III
Vocal experience may be gained through participation in the

Chamber Singers
Jazz Vocal I-III
Men’s Chorale - Maelstrom
Musical Theatre Workshop
Opera Theater
Symphonic Choir
University Chorale
Women’s Chorale - Cantilena

PUBLIC PERFORMANCES

During the academic year, the Frost School of Music presents more than 300 student forums, student and faculty recitals, concerts, lectures, master classes, and guest artist recitals. Student ensembles and faculty present numerous master classes, recitals, and concerts throughout the United States and abroad.

Students are encouraged to attend recitals, concerts, master classes, and festivals which are presented within the Frost School of Music as well as throughout metropolitan Miami.

PROFESSIONAL SOCIETIES and STUDENT ORGANIZATIONS

In addition to other extra-curricular activities of the University, the Frost School of Music has established active chapters of Phi Mu Alpha Sinfonia, Sigma Alpha Iota, Music Educators National Conference (student), American Musicological Society, Tau Beta Sigma, Pi Kappa Lambda, Music Entertainment Industry Student Association, Audio Engineering Society, and the Society of Composers, Inc.

SCHOOL OF MUSIC SCHOLARSHIPS

The Frost School of Music grants scholarships based on musical talent. All domestic students seeking scholarship funds are encouraged to complete a Free Application for Federal Student Aid and/or other required forms. Please consult with the Office of Financial Assistance Services for further information.

SPECIAL PROGRAMS

Workshops and clinics are offered to enrich the musical knowledge of in-service teachers and professional musicians during the academic year. The program of activities continues through the summer when special workshops and seminars are offered. Opportunities for pre-college students are provided in all areas of music and dance throughout the year.

MUSIC FOR NON-MUSIC DEGREE STUDENTS

Certain music courses are available to students not enrolled in a music degree program. Pre-college students, matriculating University of Miami students, and interested community adults may enroll in these courses. Students who are not currently enrolled at the University of Miami but who wish to pursue courses will need to apply as a special student through the Frost School of Music Office of Admission.
Non-music majors wishing to enroll in performance study are required to audition and may, with the permission of the appropriate faculty member and the undergraduate or graduate dean, register for one or two credits a semester upon payment of tuition and an applied music fee of $200.00 per credit. Performance study by non-music majors is subject to teacher availability.

ACADEMIC POLICIES

REQUIREMENTS FOR ADMISSION

ADMISSION TO THE FROST SCHOOL OF MUSIC

Students admitted to the Frost School of Music must successfully complete a dual admission process. In addition to the general requirements for admission to the University, the undergraduate student must meet the following requirements of the Frost School of Music:

1. Submit a Frost School of Music Application directly to the Frost School of Music Admission Office.

2. Submit an Application for Undergraduate Study directly to the University Office of Undergraduate Admission.

3. Demonstrate performance proficiency by auditioning on campus, at designated regional audition centers, or by recording. The audition will be evaluated by appropriate faculty committees.

4. After being admitted to the University each student will be required to participate in placement auditions and exams in theory and applied music (performance). These examinations will be given immediately prior to registration in the fall.

5. Transfer students who are admitted to the University will receive a tentative evaluation of their previous work from the office of Admission. Validation of credits in music will be based on the results of auditions and placement examinations discussed above. The Assistant Dean for Undergraduate Studies of the Frost School of Music determines which transferred courses will meet specific requirements for graduation.

6. Admission is granted in Fall semesters only.

Students who are admitted to the Frost School of Music must begin a program of specialized requirements in music during their first semester.

ADMISSION TO THE UNIVERSITY (UNDERGRADUATE STUDENTS)

Application forms and bulletins for undergraduate students may be secured from the University of Miami web site at www.miami.edu. The University Office of Admission receives and processes all undergraduate applications, evaluates credentials, and mails letters of acceptance to applicants who qualify for entrance. Because of the University’s selective admissions policy and limited enrollment only those applicants are accepted who present evidence of intellectual promise, unusual talent and potential, and strong personal qualifications. Admission as a transfer student requires a 3.0 grade point average from the previous institution. Admission to the University in all cases is determined by the University Office of Admission and the Frost School of Music.
Prospective students should make formal application for admission in the fall of the senior year in high school. The Frost School of Music does not participate in the Early Decision or Early Action program.

**PLACEMENT TESTS**

Upon entering the Frost School of Music, students must demonstrate through placement auditions college-level performance on their instrument and in music theory. Results of placement tests will enable music advisors to assist students in selecting the appropriate program and level of study.

**ENGLISH and MATHEMATICS REQUIREMENTS**

Students requiring English 105, English 106, or Mathematics 101 must enroll for these classes during the first year in residence and are not permitted to drop.

**AUDIT**

Due to the nature of music courses, it is not possible for a student to audit courses offered in the Frost School of Music.

**PERFORMANCE STUDY**

**BULLETIN DESCRIPTION**
The study of a musical instrument privately or in a small group. Prerequisite: Audition.

**PERFORMANCE MAJOR**
A Performance Major aspires to a professional career in music performance.

**PRINCIPAL INSTRUMENT**
Non-Performance Majors study a principal instrument to develop their music performance skills to the fullest extent possible.

**PERFORMANCE INSTRUCTION**
The letter designations A through R classify the levels of undergraduate and graduate performance instruction. The letters A through H signify undergraduate study; letters I through L, master’s study; and letters M through R, doctoral study. Transfer students enroll in Level A for the first semester and are placed at an appropriate classification level of study based on the results of the Jury at the end of each semester.

**CREDIT FOR LESSONS**
The number of credit hours awarded for performance study is determined by the student’s curriculum. Students enrolled for two credits of performance study are required to perform a Jury at the end of each semester.

**JURY**
The purpose of the Jury is to evaluate student musicianship and technique progress. Students enrolled for 2 credits of private lessons are required to play a Jury before a panel of performance faculty at the end of each semester. Juries are held during Reading Days. Students perform technical requirements and repertoire as assigned by their performance study teacher.
The private teacher prepares a Jury Sheet that lists the repertoire covered during the semester and the studio grade, for each student. The grade is recorded on the Jury Sheet and placed in the student’s file. The final grade can be lowered as a result of poor recital attendance or other requirements specific to the student’s program of study.

**PERFORMANCE WARNING, PROBATION AND DISMISSAL**

The following applies to all majors and programs in the Frost School of Music:

Students earning a grade of C+ or lower in performance study will be placed on Performance Warning for one semester. A subsequent grade of C+ or lower in performance study will result in Performance Probation for one semester. Following Probation, an additional grade of C+ or lower in performance study will result in dismissal from the Frost School of Music.

**Students Who Fail to Successfully Complete a Music Course**

Students who fail to successfully complete a music course after the second enrollment will be dismissed from the Frost School. Courses may not be dropped during the second enrollment.

**SUMMER LESSONS**

During each of the five-week summer sessions, students may register for one credit of performance study and receive a one-hour lesson per week. Summer lessons do not fulfill degree requirements.

**SPECIAL FEES**

Students studying a secondary instrument beyond the required four semesters of secondary piano will be assessed a per-credit fee and must have the approval of the undergraduate dean and program director or department chair. Students who require an accompanist may be assessed an accompanying fee.

**REQUIREMENTS FOR GRADUATION**

The general requirements for graduation from the University of Miami are described in the General Information section of this Bulletin. These general requirements are included in the specific listing of requirements for various majors under the appropriate department in the Frost School of Music. Outlines of achievement levels in applied music for each major are available in the Office of the Dean of the Frost School of Music. The student should consult regularly with his/her advisor and download their Academic Credit Evaluations which track all courses taken to see that all requirements for his/her particular area of concentration degree requirements are being met. Changes or deviations from the printed requirements must be approved in writing by the Dean.

**WRITING COURSES**

Frost School of Music students are expected to complete five writing-intensive courses in addition to English 105 and 106. Courses designated to meet this requirement are identified in the semester course schedule.
Courses satisfying this requirement are those which involve a substantial amount of writing. The preparation of papers in these courses are corrected for diction, syntax, style, and content.

**Non Music or Free Electives**

Non – Music or Free Electives may be chosen from any courses offered by the University except ESS courses numbered below 140.

**Double Degrees**

The only courses that may count for both degrees are the general education requirements (English 105 and 106, People and Society, Natural World, Math, and Humanities). For each degree a student must have a different major and minor if a minor is required. The major for one degree may not be a minor for the other degree.

**MINORS**

**MUSIC MINOR**

Any student wishing to declare a minor in music must audition on an instrument and be approved by the Frost School of Music as a minor. The approval form can be picked up at the Undergraduate Dean’s Office at the Gusman Concert Hall. A fee is assessed for private instruction. Please note that a minor in certain instruments may not be available. Minors are not available in Jazz Instruments or Jazz Voice. Availability on other instruments and voice varies from year to year depending on studio space.

A minor in music consists of 20 credits (at least 16 credits must be earned at the University of Miami):

- Music theory (MTC) 109, 110: 6 Credits
- Music literature (MCY) 131, and 3 credit MCY elective: 6 Credits
- Music performance (Instrument/Voice, 4 semesters of 1 credit lessons): 4 Credits
- Ensembles: 2 Credits
- Music Electives: 2 Credits

**HONORS**

See general Honors program described elsewhere in Bulletin.
UNDERGRADUATE ACADEMIC PROGRAMS

DANCE – Dept. Code: DAN

There is currently no Undergraduate degree for Dance.

MINOR IN DANCE

A minor in dance is intended for students interested in developing basic teaching skills for elementary and secondary dance education. Prospective students interested in this minor are required to audition for acceptance as well as maintain a grade point average of 3.0 in dance courses. 20 credits are required.

Orientation to Dance (DAN 130) This course is a prerequisite for all students who are interested in the minor in Dance 2 credits
Advanced studio technique (DAN 311 or 411 and DAN 211 and 311 or DAN 311 and 411) 6 credits
Dance education and history (DAN 385 or DAN 585 and DAN 450 or DAN 550) 6 credits
Dance education electives (DAN 285, 286, and 290) 2 credits
Studio Electives (DAN 111, DAN 190, DAN 140, DAN 240, DAN 340, DAN 280, and DAN 380) 4 credits

Dance courses are open to all university students with the approval of their advisor. For further information, contact the Dance coordinator.

Dance Course Listing
PERFORMANCE

INTRODUCTION

The mission of the Bachelor of Music Degree is to (1) provide the highest quality of education possible in the areas of musicianship that will provide the foundation for graduate degree work which will lead toward a professional performance career as a classical artist; (2) to provide performance opportunities that integrate the skills learned in music and other classes and to foster creativity and research (3) to provide audition skills and repertoire as well as the skills for building and managing the non-performance aspects of a professional career.

EDUCATIONAL OBJECTIVES

- Students will develop musicianship skills and technique adequate for acceptance into graduate study for fostering a professional career as a solo classical performer.
- Students will be able to sight-read and prepare musical performances without assistance.
- Students will develop musicianship skills and technique for working within an ensemble adequate for acceptance into graduate study leading towards a professional career as a classical performer. Ensemble requirements will vary by applied area.
- Students will develop skills for acceptance into graduate study for fostering a professional career as a solo classical performer.
- Students will have a broad knowledge of music literature in their applied area as well as an understanding of stylistic and theoretical principles of the various musical and historical periods.

DEGREE PROGRAMS

Bachelor of Music in Performance

MAJOR

Instrumental Performance (MIP)
Keyboard Performance (MKP)
Vocal Performance (MVP)
# BACHELOR OF MUSIC: INSTRUMENTAL PERFORMANCE

**Experiential Music Curriculum**

**Major Code: MIP**

## FRESHMAN YEAR

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<tr>
<th>Fall Semester</th>
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<tr>
<td>MIP Principal Instrument Forum</td>
<td>MIP Principal Instrument Forum</td>
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<td>MIP Principal Instrument (Level B)</td>
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<td>MTC 141 Music Theory II*</td>
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<td>MCY 140 Experiencing Music*</td>
<td>MCY 141 Musical Trends &amp; Traditions*</td>
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<td>MKP 140 Keyboard Studies I*</td>
<td>MKP 141 Keyboard Studies II*</td>
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<td>MTC 108 Skills Ensemble II*</td>
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<td>Natural World***</td>
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## SOPHOMORE YEAR

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<td>MIP Principal Instrument Forum</td>
<td>MIP Principal Instrument Forum</td>
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<td>MIP Principal Instrument (Level C)</td>
<td>MIP Principal Instrument (Level D)</td>
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<td>MTC 240 Music Theory III*</td>
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<td>MKP 240 Keyboard Studies III*</td>
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<td>MMI 240 Music Technology I*</td>
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<td>MTC 207 Skills Ensemble III*</td>
<td>MTC 208 Skills Ensemble IV*</td>
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## JUNIOR YEAR

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<td>MIP Principal Instrument Forum</td>
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<td>MIP Principal Instrument (Level E)</td>
<td>MIP Principal Instrument (Level F)</td>
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<td>MIP 307 Classical Improvisation</td>
<td>MIP 308 Skills Ensemble VI*</td>
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<td>MTC 313 18th Century Counterpoint</td>
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<td>MTC 416 Orchestration</td>
<td>MTC 312 Twentieth Century Techniques</td>
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<td>MCY 541 Music of the Mediaeval, Renaissance &amp; Baroque Periods or Approved MCY Elective</td>
<td>MCY 542 Music of the Classical, Romantic, and Modern Periods or MCY Elective</td>
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<td>MIP Principal Instrument (Level H)</td>
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<td>MIP 407 Skills Ensemble VII* Conducting &amp; Arranging</td>
<td>MIP 408 Skills Ensemble VIII* Culminating Project</td>
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<td>MMI 310 Music Business Essentials*</td>
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<td>MMI 530 Entrepreneurship for Musicians*</td>
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<td>MIP 541-549 Pedagogy &amp; Repertoire</td>
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* Must pass with grade of C or above.
** If math placement is higher than MTH 101, a 3-credit academic elective will be required.
*** Can be satisfied with 6 credits Natural World, or 3 credits of Natural World and 3 credits of Mathematics (MTH 113 or above).
# Must be enrolled in this course in the semester the recital will be performed.
# Bachelor of Music: Keyboard Performance

**Experiential Music Curriculum**

**Major Code:** MKP

## FRESHMAN YEAR

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<td>MMI 310 Music Business Essentials*</td>
<td>MMI 530 Entrepreneurship for Musicians*</td>
</tr>
<tr>
<td>MTC 311 Analysis &amp; Experience</td>
<td>MTC 416 Orchestration*</td>
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<tr>
<td>Ensemble (can include Chamber Ensemble)</td>
<td>Ensemble (can include Chamber Ensemble)</td>
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<tr>
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<td>Accompanying (MKP 189, 190, or 191)</td>
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<td>Free Elective</td>
<td>Approved Music Elective</td>
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<tr>
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<td><strong>16</strong></td>
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</table>

* Must pass with grade of C or above.

** Required if math placement is MTH 101 or lower.

# Must be enrolled in this course in the semester the recital will be performed.

[Keyboard Performance Course Listing](#)
# Bachelor of Music: Vocal Performance

**Experiential Music Curriculum**

**Major Code:** MVP

## Freshman Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
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<tbody>
<tr>
<td>MVP 008 Voice Forum</td>
<td>0 MVP 008 Voice Forum</td>
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<tr>
<td>MVP Voice (Level A)</td>
<td>2 MVP Voice (Level B)</td>
</tr>
<tr>
<td>MTC 140 Music Theory I*</td>
<td>2 MTC 141 Music Theory II*</td>
</tr>
<tr>
<td>MCY 140 Experiencing Music*</td>
<td>2 MCY 141 Musical Trends &amp; Traditions*</td>
</tr>
<tr>
<td>MKP 140 Keyboard Studies I*</td>
<td>1 MKP 141 Keyboard Studies II*</td>
</tr>
<tr>
<td>MTC 107 Skills Ensemble I*</td>
<td>1 MTC 108 Skills Ensemble II*</td>
</tr>
<tr>
<td>MVP 188 Opera Theater</td>
<td>1 MVP 189 Opera Theater II</td>
</tr>
<tr>
<td>Choral Ensemble</td>
<td>1 Choral Ensemble</td>
</tr>
<tr>
<td>ENG 105 English Composition I</td>
<td>3 MVP 251 Italian Diction for Singers</td>
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<tr>
<td>MVP 250 English Diction</td>
<td>1 ENG 106 English Composition II</td>
</tr>
<tr>
<td>MTH 101 Algebra for College Students**</td>
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**Total Credits:** 17

## Sophomore Year

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<tr>
<td>MVP 008 Voice Forum</td>
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<tr>
<td>MVP Voice (Level C)</td>
<td>2 MVP Voice (Level D)</td>
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<tr>
<td>MTC 240 Music Theory III*</td>
<td>2 MTC 241 Music Theory IV*</td>
</tr>
<tr>
<td>MKP 240 Keyboard Studies III*</td>
<td>1 MKP 241 Keyboard Studies IV*</td>
</tr>
<tr>
<td>MMI 240 Music Technology I*</td>
<td>1 MMI 241 Music Technology II*</td>
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<tr>
<td>MTC 207 Skills Ensemble III*</td>
<td>1 MTC 208 Skills Ensemble IV*</td>
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<tr>
<td>MVP 288 Opera Theater III</td>
<td>1 MVP 289 Opera Theater IV</td>
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<tr>
<td>Choral Ensemble</td>
<td>1 Choral Ensemble</td>
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<tr>
<td>MVP 181 Choral Conducting I</td>
<td>1 MVP 182 Choral Conducting II</td>
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<tr>
<td>MVP 252 German Diction for Singers</td>
<td>1 MVP 253 French Diction for Singers</td>
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<td>Foreign Language***</td>
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**Total Credits:** 17

## Junior Year

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<tbody>
<tr>
<td>MVP 008 Voice Forum</td>
<td>0 MVP 008 Voice Forum</td>
</tr>
<tr>
<td>MVP Voice (Level E)</td>
<td>2 MVP Voice (Level F)</td>
</tr>
<tr>
<td>MCY 541 Music of the Mediaeval, Renaissance &amp; Baroque Periods</td>
<td>3 MCY 542 Music of the Classical, Romantic, and Modern Periods</td>
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<tr>
<td>MVP 388 Opera Theater V</td>
<td>1 MVP 389 Opera Theater VI</td>
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<tr>
<td>Choral Ensemble</td>
<td>1 Choral Ensemble</td>
</tr>
<tr>
<td>MKP PIE Piano</td>
<td>1 MCY 522 Operatic Literature or</td>
</tr>
<tr>
<td>Natural World Elective</td>
<td>3 MCY 525 Art Song Literature</td>
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<tr>
<td>People &amp; Society Elective</td>
<td>3 MKP PIF Piano</td>
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<tr>
<td>Foreign Language***</td>
<td>3 MYP 399 Junior Recital#</td>
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**Total Credits:** 17

## Senior Year

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<tr>
<td>MVP 008 Voice Forum</td>
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<tr>
<td>MVP Voice (Level G)</td>
<td>2 MVP Voice (Level H)</td>
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<tr>
<td>MVP 488 Opera Theater VII</td>
<td>1 MVP 489 Opera Theater VIII</td>
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<tr>
<td>Choral Ensemble</td>
<td>1 Choral Ensemble</td>
</tr>
<tr>
<td>MMI 310 Music Business Essentials*</td>
<td>3 MMI 530 Entrepreneurship for Musicians*</td>
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<tr>
<td>MVP 552 Vocal Performance Preparation</td>
<td>1 MVP 552 Vocal Performance Preparation</td>
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<tr>
<td>MVP 538 Vocal Pedagogy</td>
<td>2 MVP 499 Senior Recital#</td>
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<tr>
<td>MTC 311 Analysis &amp; Experience</td>
<td>3 MYP 522 Operatic Literature or</td>
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<tr>
<td>Natural World Elective++</td>
<td>3 MCY 525 Art Song Literature</td>
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</table>

**Total Credits:** 16

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* Must pass with grade of C or above.

** Requires if math placement is MTH 101 or lower

*** Foreign language requirements: one semester each of Italian, French, and German and at least one additional semester of Italian, French, or German.

# Must be enrolled in this course in the semester the recital will be performed.

++ Can be satisfied with 6 credits Natural World, or 3 credits Natural World and 3 credits Mathematics (MTH 113 or above)

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**Vocal Performance Course Listing**
MUSIC EDUCATION AND MUSIC THERAPY - Dept. Code: MED

INTRODUCTION

A basic premise of the Music Education program is that music teachers must be both musicians and teachers; thus, competency as a musician is equally as important as having a strong theoretical and practical foundation in music education. The instructional program should prepare students for teaching all areas of the instructional specialization (e.g. choral, general, instrumental music) while allowing them to develop a specialization in a given area of music teaching. The theoretical and practical foundations in our series of music education techniques and methods courses incorporate ideas drawn from theory, research, and the practical experiences of the faculty and other successful practitioners.

Program Goals:

• Help students develop the musical and teaching competencies necessary to enable them to demonstrate the generic and subject area competencies and the Florida Educational Accomplished Practices (FEAP) for becoming successful music teachers.

• Enable students apply the musical and instructional skills developed in the program (and reinforced during field experience and student teaching) to teach music in elementary, middle, and senior high schools.

• Prepare students to plan and sequence music instruction at all levels.

• Help students develop the skills and desire to continue music-making as a lifetime endeavor both personally and professionally.

• Help students develop skills in integrating information from the diverse professional literature into their teaching.

EDUCATIONAL OBJECTIVES

• Students must demonstrate generic competencies required by the University in general education courses.

• Students must demonstrate competencies related to the core Professional Education courses required by the State of Florida, including 13 credits in Teaching and Learning (TAL) and a minimum of 32 credits in Music Education (MED).

• Students must demonstrate musical competencies related to the requirements of the Bachelor of Music degree, including 66 credits in music.

• Students must demonstrate teaching competencies related to the core courses in the music education specialization, including a minimum of 32 credits in Music Education.
DEGREE PROGRAMS

Bachelor of Music

MAJOR

Music Education (MED)
Music Education with Jazz Emphasis Instrumental (MEDJI)
Music Education with Jazz Emphasis Vocal (MEDJV)

The Music Education curriculum is designed to prepare students to teach music in public and private schools at both the elementary and secondary grade levels. All Music Education majors must perform at a high level either vocally or on an instrument. Students must successfully complete the Florida General Knowledge Examination (FGKE) to be admitted to teacher candidacy and the Florida Teacher Certification Examination (FCTE) to graduate.

Instrumental majors must develop knowledge of and performance ability on wind, string, and percussion instruments sufficient to teach beginning students. All choral and general music majors must develop adequate vocal skills to assure effective use of the voice in teaching.

Admission to and/or retention in the music education curriculum leading to Florida Teacher Certification requires that students be formally screened with respect to specific criteria. Following are the Requirements for Admission to Teacher Candidacy and for Admission to Associate Teaching:

Admission to Teacher Candidacy

1. Acceptance as a major in the music education program.
2. Satisfactory performance on the FGKE and the FCTE.
3. Completion of 55 semester hours of credit. (Transfer students must have at least 12 semester hours of credit earned at the University of Miami.)
4. No grade less than a C in TAL & MED courses.
6. Required Background Check completed.

Admission to Student Teaching

1. Approval of MED faculty members.
2. Completion of 90 semester hours of credit.
3. Completion of at least three-fourths of the courses in the teaching major, verified by advisor.
4. Completion of and a C or better in all MED & TAL courses

5. Completion of pre-internship field experiences with above-average evaluations.

Please be advised that the State of Florida may implement new requirements for certification.

*These requirements will be mandatory with or without notice in this bulletin.* The student is responsible for securing the application for certification and submitting the necessary documents and fees to the Florida Department of Education to obtain certification and endorsement. The DOE Certification Ombudsman in the School of Education is available to assist with certification and re-certification matters.
# BACHELOR OF MUSIC: MUSIC EDUCATION

**Experiential Music Curriculum**

**Major Code: MED**

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
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<tbody>
<tr>
<td>MED 015 Music Education Forum</td>
<td>0</td>
</tr>
<tr>
<td>Principal Instrument/Voice Forum</td>
<td>0</td>
</tr>
<tr>
<td>Principal Instrument/Voice (Level A)</td>
<td>2</td>
</tr>
<tr>
<td>MTC 140 Music Theory I*</td>
<td>2</td>
</tr>
<tr>
<td>MCV 140 Experiencing Music*</td>
<td>2</td>
</tr>
<tr>
<td>MKP 140 Keyboard Studies I*</td>
<td>1</td>
</tr>
<tr>
<td>MTC 107 Skills Ensemble I*</td>
<td>1</td>
</tr>
<tr>
<td>Large Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>MED Technique Class*</td>
<td>1</td>
</tr>
<tr>
<td>ENG 105 English Composition I</td>
<td>3</td>
</tr>
<tr>
<td>TAL 103 Psychological &amp; Technological Foundations of Education*</td>
<td>3</td>
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### SOPHOMORE YEAR

<table>
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<tbody>
<tr>
<td>MED 015 Music Education Forum</td>
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<tr>
<td>Principal Instrument/Voice Forum</td>
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<tr>
<td>Principal Instrument/Voice (Level C)</td>
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</tr>
<tr>
<td>MTC 240 Music Theory III*</td>
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<tr>
<td>MKP 240 Keyboard Studies III*</td>
<td>1</td>
</tr>
<tr>
<td>MCI 240 Music Technology I*</td>
<td>1</td>
</tr>
<tr>
<td>MTC 207 Skills Ensemble III*</td>
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</tr>
<tr>
<td>Large Ensemble</td>
<td>1</td>
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<td>Ensemble</td>
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<tr>
<td>MED Technique Class* or</td>
<td>1</td>
</tr>
<tr>
<td>MIP/MVP 250 Language Diction for Singers</td>
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<tr>
<td>MIP/MVP 181 Conducting I</td>
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<tr>
<td>TAL 305 Classroom and Behavior Management*</td>
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</table>

### JUNIOR YEAR

<table>
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<th>Fall Semester</th>
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<td>MED 015 Music Education Forum</td>
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<td>Ensemble</td>
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<tr>
<td>MCT 311 Analysis &amp; Experience</td>
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<tr>
<td>MCV 541 Music of the Mediaeval, Renaissance &amp; Baroque Periods or Approved MCV Elective</td>
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<tr>
<td>MED 542 Teaching Elementary General Music (K-S)*</td>
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<tr>
<td>MIP/MVP 281 Conducting III</td>
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### SENIOR YEAR

<table>
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<th>Spring Semester</th>
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<tbody>
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<tr>
<td>Principal Instrument/Voice Forum</td>
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</tr>
<tr>
<td>Principal Instrument/Voice (Level G)</td>
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<td>Large Ensemble</td>
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<td>Ensemble</td>
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<tr>
<td>MCT 245 Functional Techniques</td>
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<tr>
<td>MED 340 Marching Band Fundamentals* or</td>
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<tr>
<td>MIP 549 String Repertoire and Pedagogy*</td>
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<tr>
<td>MED 430 Teaching Jazz/Popular Music*</td>
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<tr>
<td>MMI 530 Entrepreneurship for Musicians*</td>
<td>3</td>
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<tr>
<td>TAL 506 Issues and Strategies for ESOL*</td>
<td>3</td>
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<tr>
<td>Natural World Elective</td>
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**NOTE:** Two semesters of MIP 170 Marching Band required of all brass, percussion, and woodwind principals. Must pass all courses in MED and TAL with grade of C or above.

* Must pass with grade of C or above.

** MTH 101 required if math placement is MTH 101 or lower.
BACHELOR OF MUSIC: MUSIC EDUCATION
Jazz Emphasis (Instrumental)
Experiential Music Curriculum
Major Code: MEDJ

<table>
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<th>Fall Semester</th>
<th>Spring Semester</th>
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<tbody>
<tr>
<td><strong>FRESHMAN YEAR</strong></td>
<td><strong>SOPHOMORE YEAR</strong></td>
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<tr>
<td>MED 015 Music Education Forum</td>
<td>MED 015 Music Education Forum</td>
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<tr>
<td>MSJ 003 Jazz Forum</td>
<td>MSJ 003 Jazz Forum</td>
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<td>Principal Instrument Forum</td>
<td>Principal Instrument Forum</td>
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<td>MSJ Principal Instrument (Level A)</td>
<td>MSJ Principal Instrument (Level B)</td>
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<tr>
<td>MTC 140 Music Theory I*</td>
<td>MTC 141 Music Theory II*</td>
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<tr>
<td>MCY 140 Experiencing Music*</td>
<td>MCY 141 Musical Trends &amp; Traditions*</td>
</tr>
<tr>
<td>MKP 140 Keyboard Studies I*</td>
<td>MKP 141 Keyboard Studies II*</td>
</tr>
<tr>
<td>MSJ 107 Skills Ensemble I*</td>
<td>MSJ 108 Skills Ensemble II*</td>
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<tr>
<td>Major Ensemble</td>
<td>Major Ensemble</td>
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<tr>
<td>MSJ 124 Introduction to Jazz Improvisation</td>
<td>MSJ 371 Jazz Improvisation I</td>
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<td>MED Technique Class*</td>
<td>MED Technique Class*</td>
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<tr>
<td>ENG 105 English Composition I</td>
<td>ENG 106 English Composition II</td>
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<td>TAL 103 Psychological Foundations of Education</td>
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<table>
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<td><strong>JUNIOR YEAR</strong></td>
<td><strong>SOPHOMORE YEAR</strong></td>
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<td>MED 015 Music Education Forum</td>
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<td>MSJ Principal Instrument (Level F)</td>
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<td>MSJ Small Ensemble</td>
<td>MSJ Small Ensemble</td>
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<td>MSJ 340 Jazz Skills III</td>
<td>MSJ 341 Jazz Skills IV</td>
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<td>Major Ensemble</td>
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<tr>
<td>MED Technique Class*</td>
<td>MED Technique Class*</td>
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<td>MSJ 519 Advanced Modern Arranging I</td>
<td>MIP 282 Instrumental Conducting IV</td>
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<td>MIP 281 Instrumental Conducting III</td>
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<tr>
<td>MED 542 Teaching Elementary General Music (K-5)*</td>
<td>MED 543 Teaching Elementary and Secondary Instrumental Music*</td>
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<td>MED 549 Teaching Secondary Choral Music*</td>
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<td><strong>TAL 305 Classroom Behavior Management</strong></td>
<td><strong>TAL 304 Content Area Reading</strong></td>
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<td><strong>TAL 304 Content Area Reading</strong></td>
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453
### SENIOR YEAR

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<td>MED 015 Music Education Forum 0</td>
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<td>MSJ 003 Jazz Forum 0</td>
<td>MED 471 Student Teaching in Elementary 6</td>
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<tr>
<td>Principal Instrument Forum 0</td>
<td>MSJ Principal Instrument (Level G) 2</td>
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<td>MED 473 Student Teaching in Secondary 6</td>
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<td>School Music (K-5) ***</td>
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<td>TAL 580 Seminar on Teaching 1</td>
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<td>MED Technique Class* 1</td>
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<tr>
<td>MED 340 Marching Band Fundamentals* 1</td>
<td>***MED 475 Student Teaching (12 credits) can be substituted for MED 471 &amp; 473</td>
</tr>
<tr>
<td>MMI 530 Entrepreneurship for Musicians 3</td>
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<tr>
<td>TAL 506 Issues and Strategies for ESOL 3</td>
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<td>Natural World Elective 3</td>
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**NOTE:** Two semesters of MIP 170 Marching Band required of all brass, percussion, and woodwind principals. Must pass all courses in MED and TAL with grade of C or above.  
* Must pass with grade of C or above.  
** MTH 101 required if math placement is MTH 101 or lower.

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### BACHELOR OF MUSIC: MUSIC EDUCATION  
Jazz Emphasis (Vocal)  
Experiential Music Curriculum  
Major Code: MEDJ

<table>
<thead>
<tr>
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<tbody>
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<td>MED 015 Music Education Forum 0</td>
<td>MED 015 Music Education Forum 0</td>
</tr>
<tr>
<td>MVP 008 Voice Forum 0</td>
<td>MVP 008 Voice Forum 0</td>
</tr>
<tr>
<td>MVP Principal Voice (Level A) 2</td>
<td>MVP Principal Voice (Level B) 2</td>
</tr>
<tr>
<td>MTC 140 Music Theory I*</td>
<td>MTC 141 Music Theory II*</td>
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<td>MCY 140 Experiencing Music*</td>
<td>MCY 141 Musical Trends &amp; Traditions*</td>
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<tr>
<td>MKP 140 Keyboard Studies I*</td>
<td>MKP 141 Keyboard Studies II*</td>
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<tr>
<td>MSJ 107 Skills Ensemble I*</td>
<td>MSJ 108 Skills Ensemble II*</td>
</tr>
<tr>
<td>Major Ensemble 1</td>
<td>Major Ensemble 1</td>
</tr>
<tr>
<td>MED Technique Class 1</td>
<td>MED Technique Class 1</td>
</tr>
<tr>
<td>ENG 105 English Composition I 3</td>
<td>MSJ 371 Jazz Improvisation I 3</td>
</tr>
<tr>
<td>TAL 103 Psychological Foundations of Education 3</td>
<td>MSJ 125 Introduction to Jazz Vocal Improvisation 3</td>
</tr>
<tr>
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<td>16</td>
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</tr>
<tr>
<td>Fall Semester</td>
<td>Spring Semester</td>
</tr>
<tr>
<td>MED 015 Music Education Forum 0</td>
<td>MED 015 Music Education Forum 0</td>
</tr>
<tr>
<td>MVP 008 Voice Forum 0</td>
<td>MVP 008 Voice Forum 0</td>
</tr>
<tr>
<td>MVP Principal Voice (Level C) 2</td>
<td>MVP Principal Voice (Level D) 2</td>
</tr>
<tr>
<td>MMI 240 Technology Studies I*</td>
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**NOTE:** Must pass all courses in MED and TAL with grade of C or above.
* Must pass with grade of C or above.
** MTH 101 required if math placement is MTH 101 or lower.
MUSIC THERAPY - Dept Code MTY

INTRODUCTION

The music therapy program provides students with the opportunity to develop comprehensive musicianship as well as clinical knowledge and skills within a rich musical, scholarly and communicative environment. Music therapy majors must demonstrate musical proficiency, either vocally or instrumentally, and must acquire musical competency on guitar, piano, voice and percussion.

Graduates of this program are prepared for careers as professional music therapists in a variety of health care and educational settings. Furthermore, graduates are eligible to take the Board Certification Exam in music therapy, leading to the credential, Music Therapist Board Certified (MT-BC). The music therapy curriculum is approved by the American Music Therapy Association, and is based on the clinical and research paradigm known as Neurologic Music Therapy.

The MTY/MED Double Major prepares individuals for careers working in school settings with special needs children or adolescents.

To remain in the Music Therapy program, students must earn a minimum 2.5 GPA each semester. Additionally, music therapy core courses must be completed with a grade of C or higher. All internship applications must include a written letter of recommendation from a music therapy faculty member.

EDUCATIONAL OBJECTIVES

The music therapy program is designed to address three primary objectives:

- Comprehensive musicianship: through intensive music study and performance experiences, students will articulate knowledge of music structure and style, produce aesthetically pleasing musical performances, and modify music for specific contexts.

- Knowledge of human behavior: by studying both theory and scientific evidence, students will develop an in-depth understanding of the systems of the human body, the intricacies of human behavior, as well as developmental norms and deviations in each domain of functioning.

- Knowledge of Music Therapy: students will engage in rigorous exploration of the theories and scientific evidence that support the use of music in a therapeutic context. Following the neurologic music therapy approach, all techniques learned in this program are based on scientific evidence regarding music perception and behavior. Furthermore, students have ample opportunity to establish and refine their therapeutic skills through six consecutive semesters of clinical practica in addition to a six-month, full-time clinical internship.
### Bachelor of Music in Music Therapy

#### MAJOR

**Music Therapy (MTY)**  
**Music Therapy & Music Education Double Major (MTY/MED)**

#### BACHELOR OF MUSIC: MUSIC THERAPY  
Experiential Music Curriculum  
Major Code: MTY

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<td>DAN 290 Intro to Dance/Movement Therapy</td>
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<td>PSY 204 Introductory Biobehavioral Statistics</td>
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**NOTE:** Must pass all courses in MED with grade of C or above.

* Must pass with grade of C or above.

** MTH 101 required if math placement is MTH 101 or lower.

*** All internship applications must include a written letter of recommendation from a music therapy faculty member.

### BACHELOR OF MUSIC: MUSIC EDUCATION & MUSIC THERAPY DOUBLE MAJOR

**Experiential Music Curriculum**

**Major Code:** MED/MTY

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### SOPHOMORE YEAR

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**TAL 305 Classroom and Behavior Management**

|                                                   | 18                                                   |

458
### JUNIOR YEAR

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### SENIOR YEAR

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</table>

### FIFTH YEAR

#### First Semester

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MED 433</td>
<td>Seminar in Music Education</td>
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<tr>
<td>MED 471</td>
<td>Associate Teaching in Elementary</td>
<td>6</td>
</tr>
<tr>
<td>School Music (K-5)</td>
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<td>6</td>
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<tr>
<td>MED 473</td>
<td>Associate Teaching in Secondary</td>
<td>6</td>
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<tr>
<td>School Music (6-12)</td>
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<td>6</td>
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<tr>
<td>TAL 580</td>
<td>Seminar on Teaching</td>
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</table>

#### Second Semester

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>MED 559</td>
<td>Internship in Music Therapy***</td>
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</tr>
<tr>
<td>MED 560</td>
<td>Internship in Music Therapy***</td>
<td>0</td>
</tr>
</tbody>
</table>

**NOTE:** It is recommended that students plan to take general education courses in the summer. This will reduce the academic load during the regular school year.

Minimum 2.5 GPA must be maintained in music education core courses. Must pass all courses in MED and TAL with grade of C or above.

A grade of C or above is required in all music therapy core courses.

* Must pass with a grade of C or above.

** Required if math placement is MTH 101 or lower.

*** All internship applications must include a written letter of recommendation from a music therapy faculty member.

# Must pass with a grade of C or above.
In order to apply for graduate studies in music therapy, students must complete either a bachelor’s degree in music therapy or a music therapy equivalency program.

THE MUSIC THERAPY EQUIVALENCY PROGRAM

The equivalency program is designed for the individual who has already completed a bachelor’s degree in a related discipline, including the following courses:

Music Theory I, II, III and IV; Music History I and II; Conducting, Arranging, Applied Lessons (6 semesters), Performing Ensembles (8 semesters), Piano Competency (4 semesters of either lessons or group piano) and Introduction to Psychology.

Beyond these courses, the program consists of 50 credit hours that can be completed in two years, followed by a six-month clinical internship. All internship applications must include a written letter of recommendation from a music therapy faculty member. Please contact the Music Therapy Program Director for a listing of the 50 credit hours.

If any of the prerequisite courses have not yet been completed, they can be taken at the University of Miami. Taking these additional courses, however, may lengthen the amount of time required to complete the equivalency program. In certain situations, alternate courses from other universities can substitute for the required courses. Depending on the nature of the course, this decision will be made by the undergraduate dean, in consultation with the Music Therapy Program Director.

In order to determine exactly how many credits are required to complete the equivalency program, the student should obtain official transcripts for their previous degree and meet with the music therapy program director. Following completion of the course and internship, students are then eligible to sit for the music therapy board certification exam and can become professional members of the American Music Therapy Association (AMTA).

For students wishing to pursue graduate studies in music therapy, the equivalency program can be combined with the master’s degree in music therapy.

Music Education and Music Therapy Course Listing
MUSIC MEDIA AND INDUSTRY - Dept. Code: MMI

The Department of Music Media and Industry includes two programs, Music Engineering Technology and Music Business and Entertainment Industries.

MUSIC BUSINESS AND ENTERTAINMENT INDUSTRIES

INTRODUCTION

The Bachelor of Music in Music Business and Entertainment Industries is a professional degree program designed to prepare qualified musicians for careers in the business management, financial, legal, and artistic areas of the music industry. Music, business, and music business courses are combined in an interdisciplinary curriculum which includes a minor in Marketing, Legal Studies, Business Administration, Management, Finance, Computer Information Systems, Public Relations, or other approved business-related area. The MBEI program also features a capstone music or entertainment industry internship.

EDUCATIONAL OBJECTIVES

- Students will have a conceptual understanding of the structures and interrelationships of the music and entertainment industries.
- Students will acquire knowledge and understanding of the vocabulary and terminology associated with the music and entertainment industries.
- Students will be able to comprehend and apply basic music publishing procedures including copyright administration, mechanical licensing and royalties distribution.
- Students will know how to promote and sell a music industry product.
- Students will have an understanding of the performing artist as a major economic factor in the marketplace.
- Students will develop a set of skills applicable to the music industry including: financial and project management, create and enact marketing and promotional plans, the ability to write basic agreements and licenses, and copyright management and administration.

DEGREE PROGRAMS

Bachelor of Music

MAJORS

Music Business & Entertainment Industries (MBEI)
Music Business & Entertainment Industries with Entrepreneurship and Management Emphasis and a minor in Creative American Music (MBEC)

MINORS

MINOR IN MUSIC BUSINESS AND ENTERTAINMENT INDUSTRIES (MBEI) (No audition required)

A minor in Music Business and Entertainment Industries consists of 12 credits:
- Entertainment Industry Survey (MMI 178) 3 Credits
- 9 Additional Credits in Music Business

MINOR IN Creative American Music (CAM)
(See below under The Bruce Hornsby Creative American Music Program)
# BACHELOR OF MUSIC: MUSIC BUSINESS & ENTERTAINMENT INDUSTRIES

With Business-Related Minor

**Business School Minors:** Marketing, Business Law, Finance, Management, Computer Information System, Entrepreneurship

**Communications School Minors:** Public relations, Advertising, or Electronic Media

## Experiential Music Curriculum

**Major Code:** MBEI

### FRESHMAN YEAR

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMI 014 Music Industry Forum</td>
<td>0</td>
</tr>
<tr>
<td>Principal Instrument/Voice Forum</td>
<td>0</td>
</tr>
<tr>
<td>Principal Instrument/Voice (Level A)</td>
<td>2</td>
</tr>
<tr>
<td>MTC 140 Music Theory I*</td>
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<tr>
<td>MCY 140 Experiencing Music*</td>
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<tr>
<td>MKP 140 Keyboard Studies I*</td>
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</tr>
<tr>
<td>MTC/MSJ 107 Skills Ensemble I*</td>
<td>1</td>
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<tr>
<td>Ensemble</td>
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<tr>
<td>ENG 105 English Composition I</td>
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<tr>
<td>MTH 113 Finite Mathematics**</td>
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Total: 15

### SOPHOMORE YEAR

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
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<tbody>
<tr>
<td>MMI 014 Music Industry Forum</td>
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<tr>
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<tr>
<td>Principal Instrument/Voice (Level C)</td>
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<tr>
<td>MTC 240 Music Theory III*</td>
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<td>MKP 240 Keyboard Skills III*</td>
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<td>MMI 240 Music Technology I*</td>
<td>1</td>
</tr>
<tr>
<td>MTC/MSJ 207 Skills Ensemble III*</td>
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<td>Ensemble</td>
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<tr>
<td>ACC 211 Financial Accounting</td>
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<tr>
<td>BSL 212 Business Law</td>
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<td>ECO 211 Economics</td>
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Total: 17

### JUNIOR YEAR

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<tr>
<td>Principal Instrument/Voice (Level E)</td>
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<td>Principal Instrument/Voice Forum</td>
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<td>Ensemble</td>
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<tr>
<td>Approved MCY Elective</td>
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<tr>
<td>MTC 300+ level Elective</td>
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</tr>
<tr>
<td>MMI 273 Artist Development &amp; Live Performance</td>
<td>3</td>
</tr>
<tr>
<td>MMI 378 Entertainment Industry Contracts</td>
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<tr>
<td>MKT 301 Market Foundations</td>
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Total: 18

### SENIOR YEAR

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<th>Spring Semester</th>
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<tbody>
<tr>
<td>MMI 014 Music Industry Forum</td>
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<tr>
<td>Principal Instrument/Voice Forum</td>
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<tr>
<td>Ensemble</td>
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<tr>
<td>MMI Elective</td>
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<tr>
<td>Approved MCY Elective</td>
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<tr>
<td>Natural World Elective</td>
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<td>Minor Course</td>
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<td>Minor Course</td>
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Total: 12-13

### NOTES:

- Students must maintain a minimum GPA of 2.70 to remain in the MBEI Program.
- * Must pass with grade of C or above.
- ** MTH 101 required if Math placement is MTH 101 or lower.

[Music Media and Industry Course Listing](#)
THE BRUCE HORNSBY CREATIVE AMERICAN MUSIC PROGRAM

The Bruce Hornsby Creative American Music Program is designed to develop the creative skills of talented performing songwriters by immersing them in the diverse traditions that form the foundation of modern American songwriting. This rigorous approach will require students to become intimate, both in understanding and practice, with the vast and varied legacy that is American music. The CAM Program is open to all Frost School of Music students by audition. Those who successfully complete the program will earn a Minor in Creative American Music.

Courses Leading to a Minor in Creative American Music

<table>
<thead>
<tr>
<th>Courses</th>
<th>CR</th>
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</thead>
<tbody>
<tr>
<td>MCY 211 African American Song Traditions</td>
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<tr>
<td>MMI 207 African American Song Workshop</td>
<td>1</td>
</tr>
<tr>
<td>MCY 212 Anglo American Song Traditions</td>
<td>3</td>
</tr>
<tr>
<td>MMI 208 Anglo American Song Workshop</td>
<td>1</td>
</tr>
<tr>
<td>MCY 311 Modern American Pop Music I</td>
<td>3</td>
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<tr>
<td>MMI 307 Modern American Pop Workshop I</td>
<td>1</td>
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<tr>
<td>MCY 312 Modern American Pop Music II</td>
<td>3</td>
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<tr>
<td>MMI 308 Modern American Pop Workshop II</td>
<td>1</td>
</tr>
<tr>
<td>MMI 320 Contemporary Lyric Writing (W)</td>
<td>3</td>
</tr>
<tr>
<td>MMI 445 Senior Project/Portfolio</td>
<td>1</td>
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</table>

Total Credits: 20

THE CONTEMPORARY PERFORMANCE PRINCIPAL

Recognizing that many talented songwriters may not always have a background in traditional performance areas, the Contemporary Performance Principal accommodates Creative American Music students who are not classical or jazz musicians. Contemporary instruments include Guitar, Voice, Bass, Keyboard, Media (Alternate Controllers), and Percussion (Drums). The Contemporary Performance Principal is restricted to songwriters who are also applying to the Creative American Music Program and to the following majors: Music Business and Entertainment Industries, Music Engineering Technology, Media Writing and Production, Music Education, and Music Therapy. Pre-screening and audition required.
## BACHELOR OF MUSIC: MUSIC BUSINESS & ENTERTAINMENT INDUSTRIES

With Double Minor in Creative American Music & Business Administration for Contemporary Performance Principals

### Experiential Music Curriculum

**Major Code: MBEC**

### FRESHMAN YEAR

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMI 014 Music Industry Forum</td>
<td>0 MMI 014 Music Industry Forum</td>
</tr>
<tr>
<td>Principal Instrument/Voice (Level A)</td>
<td>Principal Instrument/Voice (Level B)</td>
</tr>
<tr>
<td>MTC 140 Music Theory I*</td>
<td>MTC 141 Music Theory II*</td>
</tr>
<tr>
<td>MCY 140 Experiencing Music*</td>
<td>2 MCY 141 Musical Trends &amp; Traditions*</td>
</tr>
<tr>
<td>MKP 140 Keyboard Studies I*</td>
<td>MKP 141 Keyboard Studies II*</td>
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<tr>
<td>MMI 107 Skills Ensemble I*</td>
<td>MMI 108 Skills Ensemble II*</td>
</tr>
<tr>
<td>Ensemble</td>
<td>Ensemble</td>
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<tr>
<td>ENG 105 English Composition I</td>
<td>3 MMI 178 Entertainment Industry Survey</td>
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<td>MTH 113 Finite Mathematics**</td>
<td>ENG 106 English Composition II</td>
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<td></td>
<td>3 ECO 211 Economic Principles &amp; Problems</td>
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### SOPHOMORE YEAR

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<th>Spring Semester</th>
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<tbody>
<tr>
<td>MMI 014 Music Industry Forum</td>
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<td>Principal Instrument/Voice (Level C)</td>
<td>Principal Instrument/Voice (Level D)</td>
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<tr>
<td>MTC 240 Music Theory III*</td>
<td>MTC 241 Music Theory IV*</td>
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<td>MKP 240 Keyboard Studies III*</td>
<td>MKP 241 Keyboard Studies IV*</td>
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<td>MMI 240 Music Technology I*</td>
<td>MMI 241 Music Technology II*</td>
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<tr>
<td>MCY 211 African American Song Traditions</td>
<td>3 MCY 212 Anglo American Song Traditions</td>
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<td>MMI 207 African American Song Workshop</td>
<td>3 MMI 208 Anglo American Song Workshop</td>
</tr>
<tr>
<td>MMI 273 Artist Development &amp; Live Performance</td>
<td>3 MMI 274 Introduction to Music Copyright</td>
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<td>ACC 211 Principles of Financial Accounting</td>
<td>3 BSL 212 Business Law</td>
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### JUNIOR YEAR

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
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<tbody>
<tr>
<td>MMI 014 Music Industry Forum</td>
<td>0 MMI 014 Music Industry Forum</td>
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<tr>
<td>Principal Instrument/Voice (Level E)</td>
<td>Principal Instrument/Voice (Level F)</td>
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<tr>
<td>Ensemble</td>
<td>Ensemble</td>
</tr>
<tr>
<td>MCY 311 Modern American Pop Music I</td>
<td>3 MCY 312 Modern American Pop Music II</td>
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<tr>
<td>MMI 307 Modern American Pop Workshop</td>
<td>3 MMI 308 Modern American Pop Workshop II</td>
</tr>
<tr>
<td>MMI 320 Contemporary Lyric Writing</td>
<td>3 MMI 377 Royalties in the Music Publishing Industry</td>
</tr>
<tr>
<td>MMI 378 Entertainment Industry Contract Basics</td>
<td>3 MMI 537 Recorded Music Operations</td>
</tr>
<tr>
<td>MKT 301 Marketing Foundations</td>
<td>3 MMI 573 International Music Publishing</td>
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<td></td>
<td>3 ENG 230, COS 333 or ENG 331</td>
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### SENIOR YEAR

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<th>Spring Semester</th>
</tr>
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<tbody>
<tr>
<td>MMI 014 Music Industry Forum</td>
<td>0 MMI 014 Music Industry Forum</td>
</tr>
<tr>
<td>Ensemble</td>
<td>Ensemble</td>
</tr>
<tr>
<td>Approved Elective</td>
<td>3 MMI 445 Senior Project/Portfolio</td>
</tr>
<tr>
<td>MMI 530 Entrepreneurship for Musicians</td>
<td>3 MMI 455 Internship in Entertainment Industry</td>
</tr>
<tr>
<td>MGT 304 Organizational Behavior</td>
<td>3 MMI Approved Elective</td>
</tr>
<tr>
<td>PSY 204 Introductory Biobehavioral Statistics or</td>
<td>3 MGT 353 Introduction to Entrepreneurship</td>
</tr>
<tr>
<td>(CBR 102, COM 101, COM 110)</td>
<td>3 FIN 300 Finance for Non-Business Majors</td>
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<tr>
<td>Natural World Elective</td>
<td>3 Approved Elective</td>
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<td>13-14</td>
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</tbody>
</table>

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1 Contemporary Performance is available in Guitar, Bass, Drums, Keyboards, Media, and Voice by audition only upon acceptance into the Creative American Music Program.

**NOTES:** Students must maintain a minimum GPA of 2.70 to remain in the MBEI Program.

* Must pass with grade of C or above.
** MTH 101 required if Math placement is MTH 101 or lower.
MUSIC ENGINEERING TECHNOLOGY

INTRODUCTION

The mission of the Music Engineering Technology program is to (1) provide the highest quality education in the field of music engineering; (2) promote advancements in the fidelity and creativity of music recording, production and reproduction; and (3) promote advancements in the invention, design and implementation of audio hardware and software. The goals of the Music Engineering Technology program are to (1) further enhance the program's national and international stature; (2) obtain teaching infrastructure and resources needed to provide contemporary education in the field of music engineering technology; (3) ensure that curricular offerings are current and able to educate students in new and future theory and practice; and (4) to help graduates find professional career positions.

EDUCATIONAL OBJECTIVES

- Understanding the theoretical basis of sound recording, processing and reproduction.
- Understanding the practice techniques used in sound recording, processing and reproduction.
- Designing and implementing original audio hardware and/or software.
- Understanding the principles of computer science (Bachelor of Music) or electrical engineering (Bachelor of Science).

DEGREE PROGRAMS

Bachelor of Science in Music Engineering Technology (MUE)

MAJORS

Music Engineering (MUE)

The Music Engineering Technology curriculum is designed for musicians interested in pursuing a career in music recording, audio hardware and software design, and related professions in the audio, audio-video, multimedia, and internet industries. The program is interdisciplinary in nature; it includes courses in music, music engineering, computer science, electrical engineering, and mathematics. This program includes a minor in Electrical Engineering or a double major in Computer Science. Freshman students are expected to enroll in calculus, which carries a prerequisite of Trigonometry and Analytical Geometry. Prospective students are expected to have a strong background in music performance and in mathematics.
### BACHELOR OF SCIENCE: MUSIC ENGINEERING TECHNOLOGY

**With Minor in Electrical Engineering and/or Computer Engineering**

**Experiential Music Curriculum**

**Major Code:** MUE

#### FRESHMAN YEAR

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMI 013 Music Engineering Forum</td>
<td>MMI 013 Music Engineering Forum</td>
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<tr>
<td>Principal Instrument/Voice Forum</td>
<td>Principal Instrument/Voice Forum</td>
</tr>
<tr>
<td>Principal Instrument/Voice (Level A)</td>
<td>Principal Instrument/Voice (Level B)</td>
</tr>
<tr>
<td>MTC 140 Music Theory I*</td>
<td>MTC 141 Music Theory II*</td>
</tr>
<tr>
<td>MCY 140 Experiencing Music*</td>
<td>MKP 141 Keyboard Studies II*</td>
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<tr>
<td>MKP 140 Keyboard Studies I*</td>
<td>MXX 108 Skills Ensemble II*</td>
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<tr>
<td>MKP 107 Skills Ensemble I*</td>
<td>Ensemble</td>
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<tr>
<td>Ensemble</td>
<td>MMI 151 Desktop Audio Production</td>
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<tr>
<td>MMI 201 Introduction to Music Recording</td>
<td>ENG 106 English Composition II</td>
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<tr>
<td>ENG 105 English Composition I</td>
<td>EEN 118 Introduction to Programming</td>
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#### SOPHOMORE YEAR

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<tbody>
<tr>
<td>MMI 013 Music Engineering Forum</td>
<td>MMI 013 Music Engineering Forum</td>
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<td>Principal Instrument/Voice Forum</td>
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<td>Principal Instrument/Voice (Level C)</td>
<td>Principal Instrument/Voice (Level D)</td>
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<td>MTC 240 Music Theory III*</td>
<td>MTC 241 Music Theory IV*</td>
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<td>MKP 240 Keyboard Studies III*</td>
<td>MXX 208 Skills Ensemble IV*</td>
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<td>MXX 207 Skills Ensemble III*</td>
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<tr>
<td>Ensemble</td>
<td>MMI 160 Ensemble Recording Workshop I</td>
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<tr>
<td>MMI 160 Ensemble Recording Workshop I</td>
<td>MMI 161 Ensemble Recording Workshop II</td>
</tr>
<tr>
<td>EEN 201 Electrical Circuit Theory</td>
<td>EEN 204 Electronics Circuits Laboratory</td>
</tr>
<tr>
<td>PHY 205 University Physics I</td>
<td>EEN 218 Intermediate Computer Programming</td>
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#### JUNIOR YEAR

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<th>Fall Semester</th>
<th>Spring Semester</th>
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<tbody>
<tr>
<td>MMI 013 Music Engineering Forum</td>
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<tr>
<td>Principal Instrument/Voice Forum</td>
<td>Principal Instrument/Voice Forum</td>
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<td>Principal Instrument/Voice (Level E)</td>
<td>Principal Instrument/Voice (Level F)</td>
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<td>Ensemble</td>
<td>Ensemble</td>
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<tr>
<td>MMI 502 Digital Audio I</td>
<td>MMI 172 Audio Design Workshop III</td>
</tr>
<tr>
<td>@MMI Advanced Approved Mus. Engr. Tech. Elective</td>
<td>MMI 361 Acoustics</td>
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<tr>
<td>EEN 304 Logic Design</td>
<td>MMI 503 Digital Audio II</td>
</tr>
<tr>
<td>#EEN 306 Electronics II or #EEN 318 Advanced Computer Programming or #EEN 424 Unix Systems &amp; Servers</td>
<td>EEN 312 Microprocessor</td>
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<td><strong>Total Credits:</strong> 15</td>
<td><strong>Total Credits:</strong> 17</td>
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#### SENIOR YEAR

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<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
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<tbody>
<tr>
<td>MMI 013 Music Engineering Forum</td>
<td>MMI 013 Music Engineering Forum</td>
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<tr>
<td>Ensemble</td>
<td>Ensemble</td>
</tr>
<tr>
<td>MMI 501 Transducer Theory</td>
<td>MMI 530 Entrepreneurship for Musicians</td>
</tr>
<tr>
<td>MMI 310 Music Business Essentials</td>
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### NOTES:

- A minimum 2.7 GPA is required to remain in the Music Engineering Technology program.
- A minimum 2.0 GPA is required in all EEN courses taken.
- * Must pass with grade of C or above.
- # For electrical engineering minor, take EEN 306.
- For computer engineering minor, take EEN 318 or EEN 424.
- For dual minor, take EEN 306 and either EEN 318 or EEN 424.
- @ Adv. Approved Mus. Eng. Tech. Elective - 12 credits to be selected
  - Approved courses at 400+ level which contain substantial technical/creative content. Some examples:
    - MMI 460 (Recital Recording & Sound Reinforcement) (max of 3 cr)
    - MMI 465 (Internship in Music Engineering) (3 cr)
    - MMI 504 (Audio Analysis & Synthesis)
    - MMI 505 (Advanced Audio Signal Processing)
    - MTC 416 (Orchestration)
    - CMP 594 (Motion Picture - Sound Design/Sound Theory)

Students may use one of the above electives to satisfy a minor in either Electrical or Computer Engineering.
MUSICOLOGY – Dept. Code: MCY

Undergraduate students who are interested in musicology, music history or ethnomusicology are encouraged to enroll in the Bachelor of Arts in Music degree, through which they can pursue these and related subjects within a liberal arts music curriculum. [There is no Bachelor of Music degree in Musicology.]

BACHELOR OF ARTS IN MUSIC

INTRODUCTION

The mission of the Bachelor of Arts in Music is to provide students with the highest quality education possible in music, provide a broad education in the liberal arts, and provide in-depth study in an academic area outside of the Frost School of Music.

EDUCATIONAL OBJECTIVES

- Students will acquire a thorough knowledge of music theory and music history, and develop advanced competence in musical performance.
- They will develop the ability to think, speak, and write clearly with the capacity to explain and defend their views effectively and rationally based on substantive knowledge of the liberal arts.
- The student will acquire competency in a selected non-music academic area that includes a broad understanding of the area and contemporary thought within the area.

DEGREE PROGRAMS

Bachelor of Arts in Music

MAJOR

Bachelor of Arts in Music (BAM)

The Bachelor of Arts in music degree is a non-professional degree designed for talented musicians who wish to pursue a broad liberal arts education. Curriculum flexibility affords students the opportunity for a variety of pre-professional studies, including premedical and prelegal. A minor outside the Frost School of Music is required. Students in the BA in Music Program must earn a minimum 2.5 GPA each semester to remain in the program.
**BACHELOR OF ARTS IN MUSIC**  
*Experiential Music Curriculum*

**Major Code: MUS**

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### NOTE:
- Many students take 2 credits of Instrumental/Voice in order to receive a full hour lesson per week (1 credit lessons are a half hour per week).
- * Must pass with grade of C or above.
- ** Required if Math placement is MTH 101 or lower
- *** Music courses can count for Arts courses
- Courses for Minor (or second Major) depend upon requirements of the department

[Musicology Course Listing](#)
INTRODUCTION

The Bachelor of Music in Composition is designed to (1) provide students with a learning environment conducive to the pursuit, fostering, development, and exchange of ideas and information, particularly as it pertains to music composition, production, and performance; (2) to provide student access varied composition communities; (3) to continue to build upon the Frost School of Music's reputation as an innovative, forward-thinking, and first-rate center for advanced study; and (4) to maintain the highest educational, professional, and ethical standards. Goals of the program are (1) to provide students with training to be fluent in basic compositional skills; (2) to help students understand various directions that available to composers in the 21st century; and (3) to help students perform, produce, or realize their music.

The Commercial Music & Production track within the Theory & Composition curriculum is designed to prepare undergraduate students for the many issues facing today's commercial music writers and producers. In this specialized program, successful students complete diverse compositional assignments, develop technical and practical skills in the recording studio, and acquire an understanding of the music industry. Prospective students should furnish evidence of outstanding compositional ability as well as basic sequencing and music notation skills.

EDUCATIONAL OBJECTIVES

- Students develop basic compositional skills of varying lengths and genres.
- Students compose or produce works utilizing various compositional techniques and styles.
- Students compose works for varied instrumentation and/or media.

DEGREE PROGRAMS

Bachelor of Music in Composition

MAJOR

Music Theory and Composition (MTC)
Media Writing & Production (MWP)
MINOR

MINOR IN MUSIC COMPOSITION

A minor in music composition is primarily intended for students in the Frost School of Music who are pursuing majors in other fields within the Frost School. Students interested in this minor are required to submit a portfolio to the chairman of the department for approval before declaring the minor. The minor consists of 15 credits.

Composition I (MTC 101) 2 credits
Composition II (MTC 102) 2 credits
Composition III (MTC 201) 2 credits
Composition IV (MTC 202) 2 credits
Composition Workshop (MTC 182) 4 credits
Orchestration (MTC 416) or Twentieth Century Techniques (MTC 312) 3 credits

The curriculum in Composition is designed for those students intending to pursue a career as a composer and/or to pursue graduate degrees in Theory or Composition. Prospective students are expected to furnish evidence of compositional ability.
# BACHELOR OF MUSIC: COMPOSITION

**Experiential Music Curriculum**

**Major Code:** MTC

## FRESHMAN YEAR

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## SOPHOMORE YEAR

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* Must pass with grade of C or above.

** Required if Math placement is MTH 101 or lower.
# BACHELOR OF MUSIC: COMPOSITION
## (Media Writing & Production Track)
### Experiential Music Curriculum

**Major Code:** MWP

## FRESHMAN YEAR

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## SENIOR YEAR

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## Music Theory - Composition Course Listing

472
INTRODUCTION

The mission of the Studio Music and Jazz Performance Program is to: (1) prepare jazz instrumentalists to enter the music profession or graduate school; (2) identify, recruit, and retain high quality students who seek to pursue studio/jazz performance as a career; (3) foster faculty creativity and performance which serves as a role model for students; (4) develop, and revise courses in jazz improvisation, jazz arranging/composition and provide on and off campus performance opportunities; (5) produce in our on campus facility, recordings for the Down Beat Student Music Awards, compact disks, radio and Internet broadcast; and (6) provide a platform of learning that includes performance, composition,arranging, technology, conducting, scholarship and production.

EDUCATIONAL OBJECTIVES

- Students will develop musical performance skills necessary to make them competitive in the jazz world.
- Students will develop performance skills in a variety of large and small ensembles that allow a student to participate in the professional jazz world.
- Students will develop the skills necessary to play in a chamber setting emphasizing spontaneous interaction and improvisation.
- Students will develop the skills necessary to play in large jazz ensembles emphasizing the development of ensemble skills necessary in a reading situation.
- Students will perform a senior recital of sixty-minute duration that demonstrates their capabilities in the jazz idiom.
- Students will develop the skills necessary to arrange and compose in a variety of styles appropriate to the jazz and contemporary music field.

DEGREE PROGRAMS

Bachelor of Music in Studio Music & Jazz

MAJOR

Studio Music & Jazz Instrumental (MSJI)
Studio Music & Jazz Vocal (MSJV)
MINOR

MINOR IN STUDIO MUSIC AND JAZZ (INSTRUMENTAL)

A 12 credit minor is available for students enrolled in the Frost School of Music whose principal performance medium is a jazz instrument. Permission of studio teacher required. The following courses must be taken to fulfill the requirement of this minor:

- Analysis and Evolution of Jazz Styles (MSJ 113) 3 credits
- Introduction to Jazz Improvisation (MSJ 124) 3 credits
- Jazz Improvisation Theory I (MSJ 371) 3 credits
- Advanced Modern Arranging I (MSJ 519) 3 credits

INSTRUMENTAL EMPHASIS

The instrumental curriculum in Studio Music and Jazz is designed for interested and qualified students who desire to continue to develop to the highest degree their background and skills in the performance of studio music and jazz. Admission to this major pre-supposes musical training in jazz on the principal instrument.

BACHELOR OF MUSIC: STUDIO MUSIC & JAZZ
(Instrumental Emphasis)
Experiential Music Curriculum
Major Code: MSJI

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<td>2 MSJ 213 Analysis &amp; Evolution of Jazz Styles II</td>
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<td>3 MMI 241 Jazz Skills II*</td>
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<td>3 MIP 317 Basic Conducting</td>
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### JUNIOR YEAR

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| Spring Semester                                                                 |
|------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| MSJ 003 Jazz Forum                                                           | 0                                                                               |
| Principal Instrument Forum                                                   | MSJ 003 Jazz Forum                                                             |
| MSJ Principal Instrument (Level F)                                           | 0                                                                               |
| MSJ Small Ensemble                                                           | Principal Instrument Forum                                                     |
| MSJ 341 Jazz Skills IV                                                       | 2                                                                               |
| MSJ 520 Advanced Modern Arranging II                                         | MSJ Large Ensemble                                                             |
| MSJ 565 Advanced Improvisation III                                          | 3                                                                               |
| Non-Music Elective                                                           | 3                                                                               |
|                                                                              | 16                                                                              |

### SENIOR YEAR

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| Spring Semester                                                                 |
|------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| MSJ 003 Jazz Forum                                                           | 0                                                                               |
| Principal Instrument Forum                                                   | 0                                                                               |
| MSJ Principal Instrument (Level H)                                           | Principal Instrument Forum                                                     |
| MSJ Ensemble***                                                               | 2                                                                               |
| MSJ 510 Jazz Composition II                                                  | MSJ Large Ensemble                                                             |
| MSJ 499 Senior Recital#                                                      | 3                                                                               |
| Non-Music Elective                                                           | 3                                                                               |
|                                                                              | 16                                                                              |

* Must pass with grade of C or above.
** Required if Math placement is MTH 101 or lower.
*** Jazz guitar ensembles required of all jazz guitar majors.
# Must be enrolled in this course in the semester the recital will be performed.

### VOCAL EMPHASIS

The vocal curriculum in Studio Music and Jazz is designed for interested and qualified vocalists who desire to continue to develop to the highest degree their backgrounds and skills in the performance of studio music (recording), jazz, and contemporary pop music. Admission to this major presupposes music training in jazz.

### BACHELOR OF MUSIC: STUDIO MUSIC & JAZZ

(Vocal Emphasis)

Experiential Music Curriculum

Major Code: MSJV

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<td>MCK 141 Musical Trends &amp; Traditions*</td>
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### SOPHOMORE YEAR

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### SENIOR YEAR

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<tr>
<td>MSJ Large Ensemble</td>
<td>MSJ 499 Senior Recital#</td>
<td>1</td>
</tr>
<tr>
<td>MMI 310 Music Business Essentials*</td>
<td>MSJ Small Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>Humanities Elective</td>
<td>MSJ Large Ensemble</td>
<td>1</td>
</tr>
<tr>
<td>Natural World Elective</td>
<td>MMI 530 Entrepreneurship for Musicians</td>
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<td></td>
<td>Humanities Elective</td>
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<tr>
<td></td>
<td>Non-Music Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13</td>
</tr>
</tbody>
</table>

* Must pass with grade of C or above.

** Required if Math placement is MTH 101 or lower.

# Must be enrolled in this course in the semester the recital will be performed.

[Studio Music and Jazz Course Listing](#)
SCHOOL OF NURSING AND HEALTH STUDIES
www.miami.edu/nur

Please consult your 2012-2013 Student Handbook for the applicable curriculum and program policies. Please note that courses and policies are subject to change throughout the academic year. Check with the Office of Student Services at the School of Nursing and Health Studies for current materials.

The School of Nursing and Health Studies is committed to academic excellence, the advancement of nursing as a discipline, and service to society. Opportunities are available for students to study and earn course credit in a variety of international settings.

MISSION

The mission of the School of Nursing and Health Studies is to educate students and support faculty committed to excellence in the art and science of nursing and health studies through creating and disseminating health knowledge and developing culturally competent leaders to provide service to our community, the nation, and the world.

The mission of the School of Nursing and Health Studies is to educate students and support faculty committed to excellence in nursing and health science. Through research, education and practice, the school will create and disseminate health knowledge and prepare culturally competent leaders to provide safe service to our community, the nation and the world.

STUDENT RESPONSIBILITIES:

Students in the School of Nursing and Health Studies are responsible for meeting the degree requirements. It is the student's responsibility to with all the provisions of the Bulletin. Changes to academic requirements and policies are updated in the School of Nursing and Health Studies Undergraduate Handbook.

The general requirements for graduation from the University of Miami are further described in the GENERAL INFORMATION section of the Bulletin.

STUDENTS WITH DISABILITY ACCOMMODATION POLICY:

It is the policy of the University of Miami School of Nursing and Health Studies to adhere to Standards of the Americans with Disabilities Act. Any students needing special accommodations to complete a course must submit written documentation to the Office of Disability Services (ODS). This office is the primary source responsible for the coordination of auxiliary aids and services for students with disabilities. Information and/or services are available to prospective and enrolled students, their parents and/or sponsors.

FINANCIAL ASSISTANCE:

Students interested in obtaining financial aid in the form of student loans and grants should contact the Office of Financial Assistance Services. Limited, small scholarships are available through the School of Nursing and Health Studies. The qualifications for these scholarships vary; further information is available from the School of Nursing and Health Studies, Office of Financial Assistance Services, and on the SONHS website (www.miami.edu/sonhs).
FACILITIES:

The School of Nursing and Health Studies is located on the Coral Gables Campus. The four-story Jerusalem-stone and stucco Schwartz Center features classrooms and clinical practice labs, seminar and conference rooms, two computer labs, and a simulation academy, all equipped with the latest technology. The spacious 53,000-square-foot facility supports the work of more than 40 nurse scientists and clinical educators and our 741 undergraduate and graduate students enrolled in the school’s nursing and health science programs annually. The building opened in fall 2006. Library resources for nursing students are at the Otto G. Richter Library on the Coral Gables Campus and the Calder Medical Library on the Medical Center Campus. Clinical experiences are offered in a variety of hospitals and health related agencies in the community.
NURSING

ACCREDITATION

The nursing baccalaureate program is approved by the Florida Board of Nursing and accredited by the Commission of Collegiate Nursing Education (CCNE), One DuPont Circle NW, Suite 530, Washington, DC 20036, (202) 887-6791

The University of Miami School of Nursing and Health Studies (SONHS) offers courses leading to the degrees of Bachelor of Science in Nursing (BSN), Master of Science in Nursing (MSN), Doctor of Nursing Practice (DNP) and Doctor of Philosophy (PhD). Baccalaureate education is the primary foundation for professional nursing, as well as for graduate education; students who successfully complete the baccalaureate program are eligible to sit for the licensure examination to practice professional nursing. Graduates of diploma and associate nursing degree programs are admitted as transfer students to obtain the BSN degree. Students holding a baccalaureate degree in a field other than nursing who would like to pursue the BSN are admitted to the Accelerated Program.

ACADEMIC POLICIES

ADMISSION:

Admission to the BSN Program is open to individuals who have demonstrated that they have the intellectual ability and the personal qualifications necessary for the profession of nursing. All applicants must meet the requirements for admission to the University of Miami; requests for admission should be directed to the Office of Admissions on the Coral Gables Campus.

Transfer students from accredited universities, colleges, or junior colleges may be admitted with advanced standing as space allows provided they have completed courses comparable to those required by the University of Miami. Transfer students are advised to contact the Office of Student Services at the School of Nursing and Health Studies concerning prerequisites.

An RN transition option is offered which allows RNs with an associate degree or diploma to earn the BSN degree. Academic transcripts are evaluated to determine that the 60 credits of transferable course work have been successfully completed.

TECHNICAL STANDARDS:

Nursing education requires that the accumulation of scientific knowledge be accompanied by the simultaneous acquisition of skills and professional attitudes and behaviors. The nursing degrees awarded by the University of Miami School of Nursing and Health Studies at the completion of the educational process certifies that the individual has acquired a base of knowledge and skills requisite for the practice of nursing at the respective undergraduate or graduate level. To this end, all courses in the curriculum must be completed successfully. In order to acquire the knowledge and skills to function in a variety of clinical situations and to render a wide spectrum of patient care, candidates for the undergraduate and graduate degrees in nursing must have abilities and skills in five areas:
Technological compensation can be made for some disabilities in certain of these areas, but a candidate should be able to perform in a reasonably independent manner and exercise independent judgment.

**Observation**

The candidate must be able to observe demonstrations and participate in didactic courses and simulated learning opportunities. A candidate must be able to observe a patient accurately at a distance and close at hand. Observation requires the use of common sense, as well as the functional use of the senses of vision, audition, olfaction, and palpation.

**Communication**

Candidates must communicate effectively using English in clinical and classroom settings. A candidate must be able to elicit information from patients, describe changes in mood, activity and posture, and perceive nonverbal communications. A candidate must be able to communicate effectively and sensitively with patients. Communication includes not only speech, but reading and writing. The candidate must be able to communicate effectively and efficiently with all members of the health care team in both immediate and recorded modes.

**Motor**

Candidates should have sufficient motor function to elicit information from patients by palpation, auscultation, percussion and other assessment techniques. A candidate should be able to perform nursing skills requiring the use of gross and fine motor skills (e.g. IV insertion, venous blood draw, urinary catheter insertion). A candidate should be able to execute motor movements reasonably required to provide nursing care and emergency response to patients. Examples of emergency responses reasonably required of nurses are cardiopulmonary resuscitation, medication administration, and application of pressure to stop bleeding. Candidates must perform actions which require the use of both gross and fine muscular movements, equilibrium, and functional use of the senses of touch and vision. Candidates should also be able to assist and/or participate in various lifting activities.

**Conceptual-Integrative**

These abilities include measurement, calculation, reasoning, analysis, synthesis, and retention of complex information. Critical thinking requires all of these intellectual abilities in order to provide optimal nursing care. In addition, the candidate should be able to comprehend three-dimensional relationships and to understand the spatial relationships of structures.

**Behavioral-Social**

Candidates must possess the emotional health required for the full use of their intellectual abilities, the exercise of good judgment, the prompt completion of all responsibilities attendant to the care of patients, and the development of mature, sensitive and effective relationships with patients. Candidates must be able to tolerate physically taxing workloads.
and to function effectively under stress in the classroom and clinical area. They must be able to adapt to changing environments, display flexibility and learn to function in the face of uncertainties inherent in the clinical environment. Compassion, integrity, concern for others, interpersonal skills, interest and motivation are all personal qualities that are assessed during the admissions and educational process.

Reasonable accommodations will be considered on a case by case basis for individuals who meet eligibility under applicable statutes. Any person expecting to need accommodations should request them prior to beginning the program, as some accommodations may not be considered reasonable and may impact an applicant’s ability to complete all components of the program.

REQUIREMENTS FOR ENROLLMENT INTO CLINICAL COURSES:

BSN students at the University of Miami of Miami must achieve junior standing with a minimum UM GPA of 3.0 and a UM prerequisite GPA of 2.75.

Transfer students must have a minimum cumulative GPA of 3.5 and a prerequisite GPA of 3.3.

Accelerated Option students must have a minimum GPA of 3.0 with a 3.0 for prerequisite courses.

To be considered for progression or admission to clinical coursework, students are allowed to repeat only 1 failed prerequisite course.

Requirements for enrollment into upper division nursing courses:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Traditional BSN</th>
<th>Accelerated Option BSN</th>
<th>RN-BSN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry w/ Lab CHM 103/105</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Human Anatomy w/ Lab HCS 212/213</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Physiology HCS 215</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Microbiology MIC 320</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Introductory Statistics in Health Care NUR 202</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Intro to Psychology PSY 110</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>College Algebra MTH 101</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>General Biology w/ Lab BIL 150/151</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Principles of Nutrition NUR 306</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Growth &amp; Development NUR 317</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Baccalaureate Degree</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>FL RN License</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
Students are required to have a health examination prior to enrollment in clinical nursing courses. All students must provide evidence of a current TB screening test, hepatitis B, MMR, tetanus, varicella and influenza vaccinations, and certification in Basic Life Support. Students must submit to drug screening and background checks. See the School of Nursing and Health Studies Student Handbook 2012-13 for further information.

ACADEMIC PROGRESS:

To be assured of uninterrupted progression through the program, students must maintain a grade point average of 2.0 or better.

Student records are reviewed at the close of each semester, and those students with a cumulative average of less than 2.0 are subject to being placed on academic probation according to the University of Miami Policy on Academic Probation and Dismissal. A grade of C- is not an acceptable passing grade in any nursing course within the BSN program. When a clinical nursing course is repeated, both theoretical and clinical components must be repeated. When a course must be repeated progression in the nursing program will be altered in order for prerequisites to be met. Such alteration will, in all likelihood, lengthen the time required to complete the nursing program. Students will be required to fulfill the requirements that are in effect at the time of the current program. No special courses will be created for students who are repeating the same course.

Students are allowed to repeat only one failed nursing course. Failure of the same course again or any other nursing course will be grounds for dismissal from SONHS.

REGISTERED NURSE LICENSURE:

Graduates of the BSN program are eligible to take the National Council Licensure Examination (NCLEX-RN) for registered nursing after a student passes all the courses, completes the credit hours, and completes the requirements for the HESI exit exam.

REQUIREMENTS FOR GRADUATION

TRADITIONAL BSN:

GENERAL EDUCATION REQUIREMENTS

AREAS OF PROFICIENCY

Proficiency requirements are intended to ensure that students either already possess, or will develop at the University, the ability to express themselves effectively, to use mathematics with facility, and to reason cogently.

1. English Composition 6 credits

English 105 and English 106 or the equivalent

2. Writing Across the Curriculum (W) 5 courses

In addition to English 105/106, students must complete five (5) courses designated as Writing Across the Curriculum (W) courses. Courses designated as writing courses ("W" courses) require a substantial amount of writing and the preparation of papers that are corrected for diction, syntax, style, and content. Some courses satisfying this Writing Across
the Curriculum requirement may simultaneously fulfill Areas of Knowledge requirements (described below).

3. Mathematics

Students fulfill this requirement by satisfactorily completing an approved course in statistics above the level of MTH 101.

AREAS OF KNOWLEDGE

These requirements are designed to help students understand and appreciate the intellectual achievements in major areas of human inquiry and creative endeavor.

1. Natural World - 6 credits
   a. Biology 150/151
   b. Chemistry 103/105

2. People and Society - 6 credits
   a. Psychology 110
   b. 3 additional credits

Courses in the following areas may be used to fulfill this requirement: Africana Studies (AAS); American Studies (AMS); Anthropology (except APY 203); Economics (ECO); Education and Psychological Studies (EPS); Geography and Regional Studies (except GEG 120); International Studies (INS); Judaic Studies (JUS); History (HIS); Political Sciences (POL); Psychology (PSY); Sociology (SOC); Teaching and Learning (TAL); Women’s and Gender Studies (WGS), and the following courses: Broadcasting and Broadcast Journalism (CBR 102); Mass Media Communication in Society (COM 101); Communication Theory (COM 110); Interpersonal Communication (COS 112); Nonverbal Communication (COS 118); Political Communication (COS 336); Persuasion (COS 472).

3. Arts and Humanities - 12 credits

Courses in the following areas may be used to fulfill this requirement: Architecture; Music; Art and Art History; Theatre Arts; Motion Pictures and Photography; English (200-level or above); Modern Languages and Literature (300-level or above); Philosophy; Religious Studies; and the following courses: Public Speaking (COS 211); World History of the Dance (DAN 250).
BSN TRADITIONAL
PROGRAM OF STUDY
LOWER DIVISION
NURSING MAJOR

These are intended as examples only. Students have several options for completing the first two years of study. The Office of Student Services will assist students to select specific courses which most accurately reflect the student’s interests, abilities, and career goals. Students must complete all prerequisites prior to entering the junior year of clinical coursework.

### Freshman Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eng 105</td>
<td>3 cr</td>
<td>Eng 106</td>
<td>3 cr</td>
</tr>
<tr>
<td>Bil 150/151 General Biology w/ Lab</td>
<td>5 cr</td>
<td>Hcs 212/213 Human Anatomy w/ Lab</td>
<td>4 cr</td>
</tr>
<tr>
<td>Arts/Hum</td>
<td>3 cr</td>
<td>Arts/Hum</td>
<td>3 cr</td>
</tr>
<tr>
<td>Mth 101 College Algebra</td>
<td>3 cr</td>
<td>Psy 110 General Psychology</td>
<td>3 cr</td>
</tr>
<tr>
<td>UMX 100 University Experience</td>
<td>1 cr</td>
<td>Elective</td>
<td>3 cr</td>
</tr>
<tr>
<td></td>
<td>15 credits</td>
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<td>16 credits</td>
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### Sophomore Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hcs 215 Systemic Physiology</td>
<td>3 cr</td>
<td>Nur 202 Intro Statistics in Health Care</td>
<td>3 cr</td>
</tr>
<tr>
<td>Arts/Hum</td>
<td>3 cr</td>
<td>Mic 320 Intro to Microbiology for Nurses</td>
<td>3 cr</td>
</tr>
<tr>
<td>Chm 103/105 Chemistry for Life Sciences I w/ Lab</td>
<td>4 cr</td>
<td>Nur 317 Growth &amp; Development</td>
<td>3 cr</td>
</tr>
<tr>
<td>Nur 306 Principles of Nutrition</td>
<td>3 cr</td>
<td>Arts/Hum</td>
<td>3 cr</td>
</tr>
<tr>
<td>People &amp; Society</td>
<td>3 cr</td>
<td>Elective</td>
<td>Optional</td>
</tr>
<tr>
<td></td>
<td>15 credits</td>
<td></td>
<td>15 credits</td>
</tr>
</tbody>
</table>

### Prerequisites in Bold
BSN TRADITIONAL PROGRAM OF STUDY
UPPER DIVISION NURSING MAJOR
(Current Curriculum)

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 304 Adult Health I</td>
<td>6cr</td>
</tr>
<tr>
<td>NUR 307 Pharmacology</td>
<td>3cr</td>
</tr>
<tr>
<td>NUR 311 Theories &amp; Concepts of Nursing (W)</td>
<td>2cr</td>
</tr>
<tr>
<td>NUR 314 Health Assessment</td>
<td>3cr</td>
</tr>
<tr>
<td>NUR 315 Pathophysiology</td>
<td>3cr</td>
</tr>
<tr>
<td></td>
<td><strong>17 cr</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spring</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 308 Adult Health II</td>
<td>8cr</td>
</tr>
<tr>
<td>NUR 318 Maternal Health Nursing</td>
<td>4cr</td>
</tr>
<tr>
<td>NUR 320 Pediatric Health Nursing</td>
<td>4cr</td>
</tr>
<tr>
<td></td>
<td><strong>16 cr</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Fall</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 411 Adult Health III</td>
<td>5cr</td>
</tr>
<tr>
<td>NUR 440 Population Focused Nursing</td>
<td>4cr</td>
</tr>
<tr>
<td>NUR 448 Psychiatric Mental Health Nursing</td>
<td>4cr</td>
</tr>
<tr>
<td></td>
<td><strong>13 cr</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Spring</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HCS/NUR XXX Nursing Elective (W)</td>
<td>3cr</td>
</tr>
<tr>
<td>NUR 400 Theories Research and Evidence Based Practice (W)</td>
<td>3cr</td>
</tr>
<tr>
<td>NUR 450 Role Transition (W)</td>
<td>8cr</td>
</tr>
<tr>
<td></td>
<td><strong>14 cr</strong></td>
</tr>
<tr>
<td></td>
<td><strong>60 credits</strong></td>
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</table>

(W) Indicates Writing Intensive Course

# BSN TRADITIONAL PROGRAM OF STUDY
## UPPER DIVISION NURSING MAJOR
*(Starts Fall 2012)*

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 304 Adult Health I</td>
<td>6cr</td>
</tr>
<tr>
<td>NUR 307 Pharmacology</td>
<td>3cr</td>
</tr>
<tr>
<td>NUR 311 Theories &amp; Concepts of Nursing <em>(W)</em></td>
<td>2cr</td>
</tr>
<tr>
<td>NUR 314 Health Assessment</td>
<td>3cr</td>
</tr>
<tr>
<td>NUR 315 Pathophysiology</td>
<td>3cr</td>
</tr>
<tr>
<td></td>
<td><strong>17 cr</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Spring</th>
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<tr>
<td>NUR 308 Adult Health II</td>
<td>8cr</td>
</tr>
<tr>
<td>NUR 318 Maternal Health Nursing</td>
<td>4cr</td>
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<tr>
<td>NUR 320 Pediatric Health Nursing</td>
<td>4cr</td>
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<tr>
<td></td>
<td><strong>16 cr</strong></td>
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<table>
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<tr>
<td>NUR 411 Adult Health III</td>
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<td></td>
<td><strong>13 cr</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Spring</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HCS/NUR XXX Nursing Elective <em>(W)</em></td>
<td>3cr</td>
</tr>
<tr>
<td>NUR 400 Theories Research and Evidence Based Practice <em>(W)</em></td>
<td>3cr</td>
</tr>
<tr>
<td>NUR 430 Leadership in Nursing <em>(W)</em></td>
<td>3cr</td>
</tr>
<tr>
<td>NUR 453 Role Transition <em>(W)</em></td>
<td>5cr</td>
</tr>
<tr>
<td></td>
<td><strong>14 cr</strong></td>
</tr>
</tbody>
</table>

|                                           | **60 credits** |

*(W) Indicates Writing Intensive Course*
## BSN ACCELERATED PROGRAM OF STUDY
### UPPER DIVISION NURSING MAJOR
*(Current Curriculum)*

<table>
<thead>
<tr>
<th>Summer</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 304 Adult Health I</td>
<td>6cr</td>
</tr>
<tr>
<td>NUR 307 Pharmacology</td>
<td>3cr</td>
</tr>
<tr>
<td>NUR 314 Health Assessment</td>
<td>3cr</td>
</tr>
<tr>
<td>NUR 315 Pathophysiology</td>
<td>3cr</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15 cr</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 308 Adult Health II</td>
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</tr>
<tr>
<td>NUR 318 Maternal Health Nursing</td>
<td>4cr</td>
</tr>
<tr>
<td>NUR 320 Pediatric Health Nursing</td>
<td>4cr</td>
</tr>
<tr>
<td>NUR 401 Evidence-Based Nursing Practice</td>
<td>3cr</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19 cr</strong></td>
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<table>
<thead>
<tr>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 411 Adult Health III</td>
<td>5cr</td>
</tr>
<tr>
<td>NUR 440 Population Focused Nursing</td>
<td>4cr</td>
</tr>
<tr>
<td>NUR 448 Psychiatric Mental Health Nursing</td>
<td>4cr</td>
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<tr>
<td>NUR 450 Role Transition <em>(W)</em></td>
<td>8cr</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>21 cr</strong></td>
</tr>
</tbody>
</table>

**55 credits**

*(W) Indicates Writing Intensive Course*

BSN ACCELERATED PROGRAM OF STUDY
UPPER DIVISION NURSING MAJOR
(Starts Summer 2012)

<table>
<thead>
<tr>
<th>Summer</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 304 Adult Health I</td>
<td>6cr</td>
</tr>
<tr>
<td>NUR 307 Pharmacology</td>
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<td>NUR 401 Evidence-Based Nursing Practice</td>
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</tr>
<tr>
<td>NUR 430 Leadership in Nursing (W)</td>
<td>3cr</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>22 cr</strong></td>
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<table>
<thead>
<tr>
<th>Spring</th>
<th>Credits</th>
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<tbody>
<tr>
<td>NUR 411 Adult Health III</td>
<td>5cr</td>
</tr>
<tr>
<td>NUR 440 Population Focused Nursing</td>
<td>4cr</td>
</tr>
<tr>
<td>NUR 448 Psychiatric Mental Health Nursing</td>
<td>4cr</td>
</tr>
<tr>
<td>NUR 453 Role Transition (W)</td>
<td>5cr</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18 cr</strong></td>
</tr>
</tbody>
</table>

55 credits

(W) Indicates Writing Intensive Course

Approved by Curriculum Comm: 3/5/2012
Approved by School Council: 3/7/2012
## RN - BSN
### Full-Time Program of Study
#### Upper Division Nursing Major

<table>
<thead>
<tr>
<th>SUMMER</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 311 Theories &amp; Concepts of Nursing (W)</td>
<td>2 cr</td>
</tr>
<tr>
<td>NUR 314 Health Assessment</td>
<td>3 cr</td>
</tr>
<tr>
<td>NUR 350 Career Pathway: Assessment and Development</td>
<td>3 cr</td>
</tr>
<tr>
<td>NUR 390 Advanced Placement Practice I</td>
<td>10 cr</td>
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<tr>
<td><strong>Total</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>FALL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NUR 400 Theories, Research and Evidence-Based Practice (W)</td>
<td>3 cr</td>
</tr>
<tr>
<td>NUR 405 Career Pathway: Professional Development</td>
<td>3 cr</td>
</tr>
<tr>
<td>NUR 440 Population Focused Nursing</td>
<td>4 cr</td>
</tr>
<tr>
<td>NUR 403 Advanced Placement Practice II</td>
<td>10 cr</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20 cr</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SPRING</th>
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</tr>
</thead>
<tbody>
<tr>
<td>NUR 305 Issues in Health Disparities (W)</td>
<td>3 cr</td>
</tr>
<tr>
<td>NUR 408 Genetics and Healthcare (W)</td>
<td>3 cr</td>
</tr>
<tr>
<td>NUR 426 Leadership and Management in Nursing (W)</td>
<td>6 cr</td>
</tr>
<tr>
<td>NUR 414 Advanced Placement Practice II</td>
<td>10 cr</td>
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<td><strong>Total</strong></td>
<td><strong>22 cr</strong></td>
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<p>| | |</p>
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<tbody>
<tr>
<td><strong>Total</strong></td>
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</table>

(W) Indicates Writing Intensive Course
**RN - BSN**  
**Part-Time Program of Study**  
**Upper Division Nursing Major**

<table>
<thead>
<tr>
<th>SPRING</th>
<th>Credits</th>
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<tbody>
<tr>
<td>NUR 311 Theories &amp; Concepts of Nursing (W)</td>
<td>2 cr</td>
</tr>
<tr>
<td>NUR 314 Health Assessment</td>
<td>3 cr</td>
</tr>
<tr>
<td></td>
<td>5 cr</td>
</tr>
<tr>
<td>SUMMER</td>
<td></td>
</tr>
<tr>
<td>NUR 350 Career Pathway: Assessment and Development</td>
<td>3 cr</td>
</tr>
<tr>
<td>NUR 400 Theories, Research and Evidence-Based Practice (W)</td>
<td>3 cr</td>
</tr>
<tr>
<td></td>
<td>6 cr</td>
</tr>
<tr>
<td>FALL</td>
<td></td>
</tr>
<tr>
<td>NUR 405 Career Pathway: Professional Development</td>
<td>3 cr</td>
</tr>
<tr>
<td>NUR 440 Population Focused Nursing</td>
<td>4 cr</td>
</tr>
<tr>
<td></td>
<td>7 cr</td>
</tr>
<tr>
<td>SPRING</td>
<td></td>
</tr>
<tr>
<td>NUR 305 Issues in Health Disparities (W)</td>
<td>3 cr</td>
</tr>
<tr>
<td>NUR 408 Genetics and Healthcare (W)</td>
<td>3 cr</td>
</tr>
<tr>
<td></td>
<td>6 cr</td>
</tr>
<tr>
<td>SUMMER</td>
<td></td>
</tr>
<tr>
<td>NUR 426 Leadership and Management in Nursing (W)</td>
<td>6 cr</td>
</tr>
<tr>
<td></td>
<td>6 cr</td>
</tr>
<tr>
<td>ADVANCED PLACEMENT</td>
<td></td>
</tr>
<tr>
<td>NUR 390 Advanced Placement Practice I</td>
<td>10 cr</td>
</tr>
<tr>
<td>NUR 403 Advanced Placement Practice II</td>
<td>10 cr</td>
</tr>
<tr>
<td>NUR 414 Advanced Placement Practice III</td>
<td>10 cr</td>
</tr>
<tr>
<td></td>
<td>60 cr</td>
</tr>
</tbody>
</table>

(W) Indicates Writing Intensive Course

Approved by School Council 5/09
HEALTH SCIENCE

Please consult your 2012-2013 Student Handbook for the applicable curriculum and program policies. Please note that courses and policies are subject to change throughout the academic year. Check with the Office of Student Services at the School of Nursing and Health Studies for current materials.

The University of Miami School of Nursing and Health Studies offers courses leading to the degree of Bachelor of Science in Health Science. Baccalaureate education provides the foundation for further education in specialized health professional fields. Pre-professional tracks include Pre-physical Therapy, Pre-pharmacy, Pre-forensics, Health Science/Business Administration, and Health Science General.

ACADEMIC POLICIES

ADMISSION:

In accepting students into the Health Science program, the University does not in any way assure admittance into any professional graduate programs. Admission to any of these programs is dependent upon academic performance in the undergraduate course-work and is determined independently by the school or program to which the student applies.

Entering freshmen in the 75th percentile have mid-range SAT and ACT scores of 1400 and/or and 32 respectively. Entering freshmen have an average weighted GPA of 4.2. Transfer students have a mean cumulative GPA of 3.44.

REQUIREMENTS FOR ADMITTED STUDENTS:

The Health Science degree requires courses in biology, chemistry, physics (where required by the track) and health science with a minimum grade of C- in each course. Students must satisfy both the general education requirements listed below and the requirements of a specific track, to be awarded the Bachelor of Science in Health Science degree. Students must maintain at least a 2.8 GPA in the courses listed under the track requirements with no grade below a C-.

ACADEMIC PROGRAMS

The School of Nursing and Health Studies will award a Bachelor of Science in Health Science once a student has completed the requirements listed below.

The Health Science Program offers curricula that are designed to prepare students for health professional or graduate education programs. Programs of study can be tailored for students wishing a variety of health professional options. Students are encouraged to contact graduate programs directly to ascertain if there are specific course requirements that might differ from health science track requirements. Any course requirements may be added to a student’s undergraduate curriculum track.

No minor is offered in Health Science. Health Science students may not minor in biology.
GENERAL EDUCATION REQUIREMENTS

1. English Composition - 3-6 credits

Except as indicated below, students must take English 105 and 106 (or its equivalent) during the first year of enrollment. Admission to ENG 105 requires a placement score acceptable to the Department of English. Students whose placement scores are deemed unacceptably low will be required to take the non-credit course, ENG 103, before taking ENG 105 and 106. Such students must fulfill the English Composition requirement within the first three semesters. Students whose placement scores are high may be exempted from ENG 105 but not from ENG 106 or its equivalent.

2. Mathematics - 4 credits

a. MTH 161 or equivalent

3. Statistics and Computer Programming - 6 credits

a. HCS 202 or equivalent

b. CSC or CIS

4. Arts and Humanities - 12 credits

B.S.H.S. degree candidates must earn twelve credits in the three areas listed below. At least three credits must be earned in each area.

a. Fine Arts: courses in the departments of Art and Art History, Dance (DAN 250 only), Musicology (only the following: either MCY 131 or MCY 132, but not both, MCY 325, MCY 361 and MCY 362), Music Theory (MTC 125 only), and Theatre Arts (THA 101 only) count toward this requirement.

b. Literature: courses in the departments of English (200-level and higher) and Foreign Languages and Literatures (300-level and higher) count toward this requirement.

c. Philosophy and Religious Studies: courses in the departments of Philosophy and Religious Studies count toward this requirement.

d. An additional 3 credits from a, b, or c above or 3 credits in a foreign language other than ones native language.

5. People and Society - 6 credits

B.S.H.S. degree candidates must earn six credits in the following social science disciplines: African-American Studies, American Studies, Anthropology (except APY 203), Economics, Geography and Regional Studies (except GEG 120), History, International Studies, a Judaic Studies Social Science course, Political Science, Psychology, Sociology, and Women’s Studies. No more than three credits may be earned in any one discipline.

6. Writing - 5 Courses

May include any of the courses listed above except ENG 105 and ENG 106.
TRACK REQUIREMENTS:

1. Pre-Physical Therapy Track

Biology 150/151, 160/161, 250, 255 and three credits of electives in biology or health science above 100 level
Health Science 212, 213, 215
Chemistry - two semesters with lab, must include 104/106 or 201/205
Physics - two semesters with lab
Psychology 203 or 352
A minor in a discipline accepted by the School of Nursing and Health Studies.

2. Pre-Pharmacy Track

Biology 150/151, 160/161, 250, 255 and three credits of electives in biology or health science above the 100 level
Health Science 212, 213, 215
Chemistry minor - 111/113, 112/114, 201/205, 202/206
Physics - two semesters with lab
Economics 211, 212
Biochemistry and Molecular Biology 401
Communication 211

(Transfer students who do not complete the chemistry minor at the University of Miami must choose another minor accepted by the School of Nursing and Health Studies.)

3. Pre-Forensics Track

Biology 150/151, 160/161, 250, 255 and three credits of electives in biology or health science above the 100 level
Health Science 212, 213, 215, 216, and BIL 251 or BIL 252
Chemistry minor - 111/113, 112/114, 201/205, 202/206
Sociology 101, 271, 371, 372, 373, 470
Psychology 110 and 352

(Transfer students who do not complete the chemistry minor at the University of Miami must choose another minor accepted by the School of Nursing and Health Studies.)

4. Health Science/Business Administration Track

Biology 150/151, 160/161, and 12 credits of electives in biology or health science above the 100 level
Health Science 212, 213, 215
Chemistry - two semesters with lab, must include 104/106 or 201/205
Physics - two semesters with lab
Business Administration minor including ACC 211, 212, CIS, MGT 304, MKT 301, and FIN 300.
5. Health Science General Track

Biology 150/151, 160/161, 250, 255 and three credits of electives in biology or health science above 100 level
Health Science 212, 213, 215
Chemistry - two semesters with lab must include 104/106 or 201/205
Physics - two semesters with lab
A minor in a discipline accepted by the School of Nursing and Health Studies.

This program may be modified to meet the needs of various students. See an academic advisor in the SONHS for more details.

Health Science Course Listing
PUBLIC HEALTH

The University of Miami School of Nursing and Health Studies offers courses leading to the degree of Bachelor of Science in Public Health. Baccalaureate education provides the foundation for further education in Public Health and/or other specialized health professional fields.

ACADEMIC POLICIES

ADMISSION:

Entering freshmen in the 75th percentile have mid-range SAT and ACT scores of 1400 and/or and 32 respectively. Entering freshmen have an average weighted GPA of 4.2. Transfer students have a mean cumulative GPA of 3.44.

REQUIREMENTS FOR ADMITTED STUDENTS:

The course work for the BSPH Program is based on recommendations made by the Association for Prevention Teaching and Research (2008) for undergraduate course work in Public Health. Students are required to complete 30 credits of Public Health coursework, including 21 credits of core courses and 9 credits of approved electives.

ACADEMIC PROGRAMS

The School of Nursing and Health Studies will award a Bachelor of Science in Public Health, once a student has completed the requirements listed below.

The Public Health Program offers curricula that are designed to prepare students for public health practice or graduate education in health related fields. Programs of study can be tailored for students wishing to combine Public Health education with a variety of other health related fields (e.g., pre-med, pre-physical therapy).

No minor is required within the Public Health program. However, students have room within their plan of study to pursue a minor if desired.

GENERAL EDUCATION REQUIREMENTS:

1. English Composition - 3-6 credits

Except as indicated below, students must take English 105 and 106 (or its equivalent) during the first year of enrollment. Admission to ENG 105 requires a placement score acceptable to the Department of English. Students whose placement scores are deemed unacceptably low will be required to take the non-credit course, ENG 103, before taking ENG 105 and 106. Such students must fulfill the English Composition requirement within the first three semesters. Students whose placement scores are high may be exempted from ENG 105 but not from ENG 106 or its equivalent.
2. Language - 3 credits
   a. A language other than English at the intermediate (200 level or higher).

3. Mathematics - 3 credits
   a. HCS 202 – Intro to Statistics for Health Care or equivalent

4. Natural World – 6 credits
   a. BIL 150/151 General Biology with Lab (5 credits)
   An additional credit from the following science disciplines:
   
   b. Biology, Chemistry, Eco Systems and Science and Policy, Geological Sciences, Marine Science, Physics, and Physical Science, as well as Anthropology 203, Geography 120.

5. Arts and Humanities - 12 credits
   At least three credits must be earned in each area.
   
   a. Fine Arts: courses in the departments of Art and Art History, Dance (DAN 250 only), Musicology (only the following: either MCY 131 or MCY 132, but not both, MCY 325, MCY 361 and MCY 362), Music Theory (MTC 125 only), and Theatre Arts (THA 101 only) count toward this requirement.
   
   b. Literature: courses in the departments of English (200-level and higher) and Foreign Languages and Literatures (300-level and higher) count toward this requirement.
   
   c. Philosophy and Religious Studies: courses in the departments of Philosophy and Religious Studies count toward this requirement.
   
   d. An additional 3 credits from a, b, or c above.

6. People and Society - 6 credits
   a. PSY 110 – Introductory Psychology (3 credits).
   An additional 3 credits from the following Social Science disciplines:
   
   b. African-American Studies, American Studies, Anthropology (except APY 203), Economics, Geography and Regional Studies (except GEG 120), History, International Studies, a Judaic Studies Social Science course, Political Science, Psychology, Sociology, and Women’s Studies. No more than three credits may be earned in any one discipline.

7. Writing - 5 courses
PUBLIC HEALTH CORE COURSES (REQUIRED)
BSPH Pre-Rec Grid

<table>
<thead>
<tr>
<th>Course</th>
<th>Pre-rec(s)</th>
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<tbody>
<tr>
<td>HCS 206: Introduction to Public Health</td>
<td>None</td>
</tr>
<tr>
<td>HCS 208: Introductory Epidemiology</td>
<td>None</td>
</tr>
<tr>
<td>HCS 309: Health and the Environment</td>
<td>HCS 206</td>
</tr>
<tr>
<td>HCS 310: Global Health</td>
<td>HCS 206</td>
</tr>
<tr>
<td>HCS 321: Health Promotion and Disease</td>
<td>HCS 206</td>
</tr>
<tr>
<td>Prevention</td>
<td></td>
</tr>
<tr>
<td>HCS 490: Field Practicum in Community</td>
<td>All required coursework for BSPH (HCS 206, HCS 208, HCS 309, HCS 310, HCS</td>
</tr>
<tr>
<td>Health</td>
<td>321, HST 536 or other Health Policy Course)</td>
</tr>
<tr>
<td>HST 536: Health Policy</td>
<td>Junior or Senior standing</td>
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</table>

*APPROVED PUBLIC HEALTH ELECTIVES (9 credits required)
HCS/NUR 301: Human Sexuality (Fall)
HCS/NUR 305: Issues in Health Disparities (Spring)
HCS/NUR 306: Principles of Nutrition (Spring)
NUR 319: Bioethics (By Announcement Only)
HCS 355: Global Nutrition (Fall)
HCS 317: Growth and Development (Spring)
HCS 419: Contemporary Issues in South Florida (Fall)
HCS 487: Global Health Practicum (Permission of Instructor)

* Additional Public Health electives may be approved by the public health planning committee.

MINOR

A minor in Public Health is offered. The minor in Public Health consists of 12 credits including: HCS 206 Introduction to Public Health (3 cr), HCS 208 Introductory Epidemiology (3 cr), HCS 309 Health and Environment (3 cr), and an approved Public Health elective (3 cr).

Public Health Courses Listed Under Health Science Course Listing
All graduate work (except for the Master’s Degree in Law, J.D. in Law and M.D. degree) at the University of Miami is under the direction of the Dean of the Graduate School and the Graduate Council.

All graduate students at the University of Miami are subject to the general standards and requirements of the University and its various programs in regard to attendance, examinations, payment of fees, and conduct, as well as to the specific requirements of the Graduate School. The graduate student is expected to assume the initiative in completing all requirements in the time specified.

Admission requirements are described in the Bulletin of the Graduate School, and may be obtained from the individual department or program. Information is also available at www.miami.edu/grad.

Applications to the Graduate School are processed through the various Schools and Colleges. See http://www.miami.edu/gs/index.php/graduate_school/apply/ for a listing of online applications by program.

Prospective students should note that “graduate study” means an integrated program of advanced, specialized study, based on an undergraduate major and/or adequate background, presupposing academic and personal maturity, and making much more than average demand upon the industry, initiative, and scholarship of the student. The term must be distinguished from “post-graduation study” which means merely that courses, not necessarily of graduate level, are taken after the student has received a bachelor’s degree.

To preserve its ideals of scholarship, conduct, and character the Graduate School reserves the right and the student by his/her registration concedes the right to require the withdrawal of any student for any reason deemed sufficient by the Graduate School at any time.

MISSION

The mission of the Graduate School is to promote graduate education, scholarship, and research; to support individuals, departments, and programs in the pursuit of excellence; to foster innovative, multidisciplinary, and interdisciplinary activities; and to maintain high ethical and academic standards in graduate studies.

The standards of study and conduct in the Graduate School are high. They are not set and maintained by the Graduate School but rather by the faculty who determine the standards for their individual program. The Graduate School through its Council sets no course requirements for a degree. It does set certain general residence, grade and examination standards. Fundamentally the Graduate School delegates responsibility to the student and his/her program. Within this broad responsibility the recommendation for the degree rests with the Committee.
ACADEMIC POLICIES

TIME TO COMPLETION

Time to completion starts when a student begins any program in the Graduate School, whether it be a master’s or doctoral program. All work must be completed within six years of the time of admission to graduate work, for those studying for the various master’s degrees; and within eight years for those studying for doctoral degrees. For those admitted directly into a Ph.D. program without a master’s degree in field, work must be completed within eight years. Individual programs may set a shorter time period. Exceptions may be granted by the Dean of the Graduate School at the request of the Graduate Program Director.

RECENCY/VALIDATION FOR OVER-AGED CREDITS

Graduate credits transferred from another university may not be applied toward a graduate degree at the University of Miami if their age at the time of acceptance into the University of Miami program exceeds six years. On an individual basis, students may be permitted to validate over-aged credits by examination, with program approval.

REGISTRATION

Graduate students can register on the first day of registration and through the registration period. For more information on registration, students should contact their respective School or College. See academic calendar for dates of registration periods at http://www.miami.edu/index.php/registrar/calendar/.

FULL-TIME STUDY

The categories of full-time students include:

1. Graduate students taking eighteen or more graduate credits during the calendar year (nine credits in a regular semester, or 3 credits in a summer session).
2. Graduate teaching and research assistants taking sixteen or more graduate credits during the calendar year (eight credits in regular semester or 3 credits in a summer session).
3. Graduate students enrolled in any course numbered 700 or above, i.e., any 700-level course required for the completion of the degree.
4. All MBA for Executive and Professional students and Master of Science in Professional Management students are considered full-time.

In all cases, determination as to whether or not a student is in full-time study is the privilege of the Dean of the Graduate School.

The maximum number of credits allowed for full-time study is 12 for each semester and three for each summer session. Exception to this policy can only be made by the Dean of the Graduate School or his/her designee and requires a signed recommendation from the Program Director.
Full-time registration is required during the semester or summer session in which a candidate defends the thesis or dissertation. Students who wish to have this requirement waived must have a written request provided to the Graduate School by the Dean of their respective College or School. In this case the student must graduate within the same academic year.

No full-time faculty member may be a full-time student, whether or not working toward a degree. Nor may a full-time student be a full-time faculty member. No full-time student will be a principal investigator in any grant or contract, whether in name or fact. And no principal investigator will be a full-time student.

Exceptions to these rules may be made in cases in which students are encouraged to apply individually for small research grants that are consistent with and contribute to their field of study and their dissertation work, and, in certain programs, in which students in a terminal degree status are obliged, as a part of their degree program, to teach as de facto faculty members. (Note: Faculty from School of Nursing and Health Sciences and from the Physical Therapy program are permitted to pursue Doctoral degrees in their home program/school.)

WITHDRAWALS

Withdrawals, either from individual courses or from a Graduate program, should be processed through the office of the Dean of the School of the student’s program. Students who wish to officially withdraw from joint or dual degree programs should consult the office of the Dean of the School or College for both disciplines. The date of withdrawal is that on which the student notifies the office of the Dean or the date of receipt of a letter requesting withdrawal. No withdrawal from the University is official until the student has consulted with the Dean of his/her school and has completed the necessary forms.

Students wishing to officially withdraw from the University of Miami must provide the Office of the Registrar notification of their intent to withdraw. Initial notification may be made in person, in writing, by fax, or by telephone. This notification will be recorded and used for notification purposes for the Federal Government. Repayment of any federal funds will be based on the date of notification.

Students must also follow the required process as set forth by their school/college for withdrawing from courses. This process often requires that a signature from a dean or the dean’s representative be obtained on a Change of Course form. In some cases, students can complete the Change of Course form (hard copy or through the myUM system) without an approving signature. Change of Course forms must be submitted to the Office of the Registrar for final processing/review.

In addition to the completion of the Change of Course form, students will be asked to complete a Withdrawal Checklist and a Withdrawing Student Survey. The Withdrawal Checklist provides students with a series of offices that need to be notified concerning their withdrawal.

To officially withdraw from the MBA Program or Master of Science in Professional Management program, students must inform the Office of Graduate Business Programs in writing prior to the beginning of a course/term. Tuition will be refunded on a prorated basis based on the number of class meetings attended. No tuition refund will be granted when class attendance has exceeded 50% of class meetings. For further information contact: Office of Graduate Business Programs, (305) 284-4643, email: mba@miami.edu.
MILITARY WITHDRAWAL

Tuition refunds of 100% are granted to students who withdraw due to military service, provided they do not receive credit for the course (see below under “Credit for Courses After the 12th Week of the Semester”).

If you receive federal financial aid and withdraw before you complete 60% of the semester, a pro rate calculation will determine the amount of financial aid you have earned. It is based on the amount of time you were enrolled. This calculation is independent of any charges incurred at the university.

Credit for Courses After the 12th Week of the Semester

The following statement of policy was adopted by action of the Academic Deans’ Council April 14, 1967:

1. On recommendation of the Dean of the school, students who withdraw after the 12th week of the semester because of official orders to active duty with the Armed Forces of the United States may be awarded credit in any course in which they have achieved a C or better up to the time of withdrawal. Instructors must certify that the student had achieved satisfactory accomplishment on the basis of previous work in the course by awarding an appropriate grade. Accomplishment of less than C should be entered on the permanent record as a withdrawal without prejudice (W).

2. Credit granted for a course under this policy should count toward graduation.

3. There should be no refund of tuition for courses for which credit has been granted. Refunds of courses not awarded credit should be on the same basis as complete withdrawals for military service.

4. The above recommendations are procedures for determining the awarding of credit and do not release the student from the usual withdrawal procedures.

Veterans and children of deceased or totally disabled veterans attending the University as students under the government’s educational benefits bills must also clear their withdrawal with the main campus Veterans Affairs Officials in the Office of the Registrar in the Whitten University Center, Room 121 / Phone: (305) 284-2294 or Email: registrar@miami.edu.

Additional Information on Military Withdrawal is available at:
https://www6.miami.edu/registrar/MilitaryWithdrawalInfo.pdf

LEAVE OF ABSENCE

Leave may be obtained by petition of the Program Director followed by the approval of the Dean of the Graduate School. Leave of Absence officially stops the time to completion clock. The Petition for Leave of Absence form may be found at http://www.miami.edu/gs/index.php/graduate_school/forms/.
**GRADES AND CREDITS**
The same letter grades are used for graduate and undergraduate students, but with somewhat different meaning.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Excellent accomplishment</td>
</tr>
<tr>
<td>B</td>
<td>Good accomplishment</td>
</tr>
<tr>
<td>C</td>
<td>Fair, but below that expected of graduate students (C- is the lowest passing grade. Some programs may require higher standards.).</td>
</tr>
<tr>
<td>S</td>
<td>Symbol used for acceptable (U-unacceptable) thesis, dissertation, practicum, and internship credit. It may be used for regular courses under special circumstances with the prior approval of the instructor, department chairman, and the Dean of the Graduate School. The Graduate School considers a grade of “S” to indicate a minimum of a 3.0 GPA in a graduate course if a student has taken no prior coursework on the graduate level. A grade of “S” reflects that a student is in good academic standing.</td>
</tr>
<tr>
<td>D</td>
<td>Poor (not acceptable for credit toward the advanced degree).</td>
</tr>
<tr>
<td>F</td>
<td>Failure</td>
</tr>
<tr>
<td>W</td>
<td>Course dropped prior to the last day for withdrawing from classes as published in the official calendar of the university. Courses dropped after last date must have approval of Dean of graduate school. Credit can be earned only by successful repetition of the course.</td>
</tr>
<tr>
<td>I</td>
<td>Incomplete work in passing status with the instructor’s permission to complete the course. (Not to be used for thesis or dissertation credits). The “I” should be changed to a letter grade within one (1) calendar year after it is given, unless the Academic Dean of the student’s primary school or college and the Dean of the Graduate School approve the delay. If the “I” is not changed within one year, credit can be earned only by successful repetition of the course. (Note: Fellowships and financial aid may be withdrawn if there is an excess accumulation of “I”s on a student’s transcript).</td>
</tr>
<tr>
<td>IP</td>
<td>Denotes in progress grade given by instructor for any course (500G, 600, or 700 level) in which a student has made expected or clearly satisfactory progress during the semester, but has yet fully to complete requirements for the course. “IP” is to be given for 700-level internships, research, thesis, and dissertation courses that have not been completed. Upon satisfaction of all Graduate School requirements, the Assistant Director, Programs of the Graduate School will issue final credit for all master’s thesis and doctoral dissertation courses (e.g., 710, 720, 730, 735, 740 and 750). Zero-credit courses (e.g., 720 and 750) will be changed to “S.” Please note that all “IP”s must be converted to “S”, letter grade, or “I” at graduation. “IP” will also be converted to “I” upon any departure from the University for a period in excess of one year.</td>
</tr>
<tr>
<td>NG</td>
<td>Symbol assigned by Enrollment Services indicating that the instructor has not yet reported the student’s grade. For a student to receive credit for the course, the instructor must report a passing grade prior to the student’s graduation.*</td>
</tr>
</tbody>
</table>

* Faculty Senate Legislation #85005(B)

An average of B (3.0) is required for a graduate degree, and no “D” credit may be counted toward the degree. All work leading to the graduate degree and taken as a graduate student will be counted in computing the quality point average, including courses graded “D”.

No transferred credits are calculated into the University of Miami G.P.A.
AWARD OF ACADEMIC MERIT

Students who obtain a 3.8 G.P.A. or better will receive an Award of Academic Merit from the Graduate School. The Award is posted on the transcript.

Quality points are awarded as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Quality Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.00</td>
</tr>
<tr>
<td>A</td>
<td>4.00</td>
</tr>
<tr>
<td>A-</td>
<td>3.70</td>
</tr>
<tr>
<td>B+</td>
<td>3.30</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
</tr>
<tr>
<td>B-</td>
<td>2.70</td>
</tr>
<tr>
<td>C+</td>
<td>2.30</td>
</tr>
<tr>
<td>C</td>
<td>2.00</td>
</tr>
<tr>
<td>C-</td>
<td>1.70</td>
</tr>
<tr>
<td>D+</td>
<td>0.00</td>
</tr>
<tr>
<td>D</td>
<td>0.00</td>
</tr>
<tr>
<td>F</td>
<td>0.00</td>
</tr>
</tbody>
</table>

The quality point average is then determined by dividing the total of quality points earned by the total of credits attempted. The symbols “S”, “W”, and “I” are not counted as credit attempted.

REPEAT RULE

A student may repeat a course in which a failing grade was earned, but the repetition of the course will not eliminate the previous grade from the record. A course may be repeated only once unless written authorization is provided by the Dean of the Graduate School. All grades are included in the computation of the quality point average. If a course in which an unsatisfactory grade (as determined by the program advisor) was earned is repeated and the repeat grade is a “C-” or higher, the number of credits required for graduation will be increased by the number of credits repeated.

Registrations which involve repeating a course in which a grade of “A” or “B” has already been earned may not earn quality points or credit hours, nor count as credits attempted.

LEVELS OF GRADUATE STUDY

Graduate study implies the need for a minimum of formal courses and a maximum of independent work under faculty supervision. Coursework, in itself, is not necessarily a determinant of graduate progress and achievement. The appropriate determinants are the ability of the qualified student to master the various qualifying and comprehensive examinations that a program requires of the student. All work taken by a graduate student in the major area or area of concentration shall be at the graduate level (500 or above). With the permission of the major department or program of major concentration a student may take elective credits (not prerequisite to the major) at any level provided the following limits are observed:
Approval for undergraduate credits as part of the graduate degree program can be made only after a minimum of 12 credits is completed. Award may not be made retroactively, nor are credits accepted from another institution.

**RA, TA, GA Hourly Guidelines**

To receive a stipend an RA, TA, GA must be a full-time student.

Graduate students with appointments as RAs, TAs or GAs will be expected to work 20 hours per week with the exception of efforts directly required for dissertation research.

International students may work on campus provided the student is maintaining F1 status and does not work more than a total of 20 hours per week (including any off campus work the student may have been authorized to perform) while school is in session. Questions regarding work for international students should be directed to International Student and Scholar Services: [http://www.miami.edu/isss](http://www.miami.edu/isss).

Graduate students with Assistantships and Fellowships will be classified with the following designations. *(FE) Fellows, *(RA) Research Assistant, *(TA) Teaching Assistant, *(GA) Graduate Assistant, *(TR) Trainee. *Please contact the Graduate School for specific codes.

Definitions:

FE (Fellow): Responsibilities do not include the provision of direct services to the University and require internal/external fellowship support.

RA (Research Assistant): Responsibilities are mainly conducting research and/or assisting with research projects.

TA (Teaching Assistant): Responsibilities are mainly teaching and/or assisting in the area of teaching.

GA (Graduate Assistant): Responsibilities are mainly in professional support of University operations and programs. Graduate students should not be hired to perform clerical duties.

TR (Trainee): Designated as such by specific federal guidelines which indicate a complex process wherein the trainee takes on an increasingly independent role in the selection, conceptualization, and execution of research projects under the supervision of an experienced mentor.

In definitions where the word “mainly” is used, “mainly” is defined as greater than 50%.
Requirements for Teaching Assistants

1. Graduate teaching assistants who are the instructors of record and responsible for assigning grades in a course must have a master’s in the teaching discipline or 18 graduate credit hours in the discipline.

2. Graduate teaching assistants must be directly supervised by a faculty member in the teaching discipline, must attend regular in-service training provided by the Instructional Advancement Center (in coordination with the Graduate School or provided by the specific graduate program), and must be reviewed by the supervising faculty member once a semester.

3. Graduate Teaching Assistants who have previous teaching experience and indication of competency may be exempted from TA Training by the Dean of the Graduate School in consultation with the Graduate Program Director in the discipline. A request for waiver must be submitted to the Dean of the Graduate School by the Graduate Program Director.

POLICY ON OUTSIDE EMPLOYMENT FOR RA/TA/GA

A graduate student must have prior approval from the chair or advisor to work outside the department, since such activities might impede progress toward his/her degree. Any question or concern should be discussed with the Dean of the Graduate School.

1. A graduate student is allowed to supplement his/her stipend by tutoring undergraduate students in courses in which he/she has no direct responsibility at the time.

2. A graduate student who is teaching a class or lab of a multi-section course using a common syllabus and common exams may not tutor any student in any section of that course.

3. A graduate student, like any other member of the teaching faculty, may offer review sessions for his or her students to which he or she may invite students from other sections of the same course. The graduate student arranging such sessions may not under any circumstances take money from the students in attendance.

4. A graduate student may use his or her office for tutoring or may ask departmental permission to use a classroom or other appropriate university facility.

5. The graduate advisor or department chair may require a graduate student to limit his or her outside employment or tutoring activity if, in the view of the department, such activity is impeding the graduate student’s academic progress or keeping him or her from fulfilling responsibilities within the department.

6. International students should clear their work instructions with International Student and Scholar Services. Questions regarding work for international students should be directed to International Student and Scholar Services, (305) 284-2928, email: isss@miami.edu or visit: http://www.miami.edu/isss.
GRADUATION

It is the responsibility of the student to apply for graduation through MyUM during the student’s final semester before the date indicated on the Graduate School calendar and the Schedule of Classes. These dates are published at http://www.miami.edu/index.php/registrar/calendar/. Students who previously applied for a diploma but did not receive the degree must repeat the application procedure. Deadlines for the commencement program are firm. Students may walk in the graduation ceremony, but the program will indicate “in progress” if information is missing. Students will be degree candidates until they have been cleared by the Graduate School.

Graduation ceremonies are held in May and December only. Those completing degree requirements during the fall, spring or summer sessions may, if they wish, participate in the graduation ceremonies of the previous or following May or December. Students receiving Ph.D., D.M.A., D.N.P, D.P.T, or Ed.D. degrees who are participating in the hooding ceremony and all masters marching in the graduation ceremony must have the approval of the graduate advisor, director, or appropriate person in the department/school to participate in the ceremonies.

Participation in graduation for students in all graduate programs is contingent upon the following:

1. The student must have met the requirements for their program.

2. The student must have a minimum of 3.00 cumulative grade point average; all students receiving master’s degrees must have completed a minimum of 30 credits; all Ph.D. D.MA. and Ed.D. students must have completed a minimum of 60 credits.

3. The student (Ph.D. D.M.A. and Ed.D. candidates) must be admitted to candidacy one semester prior to graduation.

4. The student may not have any outstanding debt including, but not limited to, tuition, fines, and fees. Tuition for the last semester of study must be paid in full by the beginning of the final semester.

5. The student must complete an electronic thesis or dissertation (ETD) according to the Graduate School’s requirements and submit all hard copies, paperwork, and fees (if required) by the last day of exams in the semester the student wishes to graduate. It is recommended that students begin the ETD process early in the semester by discussing with their advisors a suitable timetable for completing the defense of their thesis or dissertation. Students should check the academic calendar for the defense deadline date set for the semester they wish to graduate. The Graduate School also encourages students to familiarize themselves with the ETD process at www.miami.edu/etd or contact the Dissertation Editor early in the semester at grad.dissertation@miami.edu if they have questions regarding any aspect of the ETD process. (See dissertation section of the Ph.D. description.)
CLEARANCE FOR DEGREE CONFERRAL

For the Graduate School to clear a student for graduation:

1. All original documents (transcripts from previous degrees, GRE scores, etc.) must be on record in the Graduate School (except for MBA students).

2. The Admission to Candidacy form must have been completed by the program at least one semester before graduation. The Graduate School does not require application to candidacy for master’s, D.P.T., nor D.N.P. degrees.

3. The student must defend his/her thesis or dissertation no later than two weeks before the last day of class in the semester he/she wishes to graduate.

4. The student must submit his/her final, Dissertation Editor-approved thesis or dissertation with all corrections completed and final paperwork turned in to the Graduate School by the last day of exams in the semester he/she wishes to graduate for their clearance to be processed in time.

CLASS ATTENDANCE AND ABSENCES

Regular and punctual class attendance is expected of all graduate students. It is the student’s responsibility to know the instructor’s policies regarding examinations, penalties for absences, and late or missed work.

V.A. students will be provided a grade report at the end of each semester period. A copy of the report will be placed in the student’s permanent file maintained by the Veteran Affairs Office. Because of the far-reaching effects of these revisions in the V.A. educational benefits program, it is suggested that you exercise care and judgment in your program planning and in the selection of your courses.

STUDENT RESPONSIBILITY

Standards of study and conduct in the Graduate School are set and maintained, not by fiat of the Graduate School, but rather by the faculty who determine the standards. The Graduate School through its Council sets no course requirements for a degree. It does set certain general residence, grade and examination standards. Fundamentally the Graduate School devolves responsibility upon the student and the appointed committee. Within this broad responsibility the recommendation for the degree rests with the committee.

All graduate students at the University of Miami are subject to the general standards and requirements of the University and its various departments in regard to attendance, examinations, payment of fees, and conduct, as well as to the specific requirements of the Graduate School. The graduate student is expected to assume the initiative in completing all requirements at the time specified.

To preserve its ideals of scholarship, conduct, and character, the Graduate School reserves the right and the student by his/her registration concedes the right to require the withdrawal of any student for any reason deemed sufficient by the Graduate School at any time.
It is the responsibility of the student to be informed concerning all regulations and procedures required. In no case will a regulation be waived or an exception granted because a student pleads ignorance of the regulation or asserts that he/she was not informed of it by an advisor or other authority. The student should become familiar with the Bulletin, including:

1. The section presenting the requirements for the degree to be undertaken;
2. The offerings and requirements of the major department;
3. The Graduate Student Honor Code.

After the applicant has been admitted to the Graduate School but before the first registration, the student should consult the school or college and program in which the major work will be done concerning course requirements, deficiencies, if any, the planning of a program or special regulations. Programs may have additional degree requirements that are not listed in this Bulletin. All registrations require the signature of the dean of the school or college (or his/her representative) in which the degree is to be awarded. Only the Council of the Graduate School may waive requirements stated in this Bulletin.

GRADUATE STUDENT CODE OF ETHICS

Graduate students agree to abide by the Graduate Student Honor Code.

The University of Miami expects all graduate students to adhere to the highest standards of ethics and academic integrity. All forms of academic fraud are strictly prohibited. These include, but are not limited to, plagiarism, cheating, collusion, falsification, violation of professional ethics or misrepresentation of research data. Students certify that all work (whether an examination, dissertation, thesis, research paper, research project, form of creative expression, experimental data, or any other academic undertaking) submitted for evaluation, presentation, or publication meets these standards. Additionally, graduate students are expected to respect and appreciate the diversity of the community and to respect the rights of others, be they property, privacy, opinion, or expression. Students found to be in violation of these standards are subject to disciplinary actions by the students program and/or the Graduate School through the process described in the Graduate Student Honor Code. All graduate students are bound by the rules and regulations of the University of Miami that apply to them. The Honor Code can be reviewed at http://www6.miami.edu/dean-students/pdf/graduate_honorcode.pdf.

GRADUATE SCHOOL GRIEVANCE GUIDELINES

INTRODUCTION

These University of Miami Graduate Grievance Procedures provides an opportunity for the resolution of disputes involving graduate students in a fair and collegial manner. These Graduate Student Grievance Procedures supersede all prior such procedures in effect or formerly utilized at the graduate level. They do not supplant UM Students Rights & Responsibilities or any other published policy or procedure relating to graduate students.

PURVIEW OF THE GUIDELINES

The formal grievance process described herein is intended for cases not involving grades or matters covered by the Honor Code, which have not been resolved at the department or program level, and it is available only after a final determination within the relevant School
or College has been reached. Students are encouraged to seek assistance from the University Ombudsperson for possible resolution before initiating the formal graduate grievance process. The procedures set forth here are applicable to any of the following types of grievances by graduate students who are enrolled in any graduate program at the University of Miami, except exclusively in the MD and JD programs:

1. grievances alleging improper dismissal or suspension from a graduate program;
2. grievances alleging the improper withholding or termination of financial support of any kind;
3. grievances alleging any other improper treatment, either substantive or procedural, of a graduate student by a faculty member, department or program, or university agency or administrator except:
   a. allegations of improper evaluation of the quality and/or quantity of academic work (see UM Student Rights & Responsibilities);
   b. allegations of unfair recommendation for employment or further graduate study;
   c. allegations of discriminatory treatment arising from the student complainant’s age, race, gender, sexual preference, handicap, national origin, or religion. (Such allegations ordinarily are handled by the Office of Equality Administration).

CONSTITUTION OF THE COMMITTEE AND GRIEVANCE PANEL

The Graduate Council Grievance Committee (GCGC) is a standing committee comprised of the Schools’ and Colleges’ alternate representatives to the Graduate Council. Grievances as understood herein shall be heard by ad hoc appeals panels, constituted from time to time by the Dean of the Graduate School to review individual graduate grievances. The grievance review panel (GRP) shall consist of five disinterested members: four faculty members of the GCGC and one graduate student appointed by the executive board of the Graduate Students’ Association. Notice of the constitution of the GRP shall be given by the Office of the Graduate Dean in writing to all parties to the grievance within ten (10) days after the grievance review request is properly filed.

Any party to the grievance may challenge the disinterestedness of a GRP member in writing to the Dean of the Graduate School within five (5) days after notification of the appointment. The challenge must specify reasons that would prevent the committee member or graduate student from making an unbiased recommendation with respect to the grievance. If such a challenge is determined to be valid by the Graduate Dean, a substitute appointment shall be made and the process will resume accordingly.

PROCEDURE AND TIME LIMITS FOR FILING A GRIEVANCE

After a final determination has been made in the relevant School or College (or by the head of the relevant administrative office in the event of a grievance against a university agency), a student who believes he or she has grounds for appeal within the purview of these guidelines may file a written grievance review request with the Office of the Dean of the Graduate School. The request shall describe the student’s allegations in a clear and concise fashion and shall clearly identify the individual(s), program(s), department, School
or College, and/or University agency or administrator against whom the grievance is brought. The student’s written grievance review request shall be filed within thirty (30) days of the final determination. No grievance review request nor any other appeal of any kind will be granted after this time limit has expired unless a written extension of time is granted by the Dean of the Graduate School based on a written request from the grievant stating good cause.

**DEFINITIONS AND ASSUMPTIONS**

*Burden of Persuasion:* The burden of persuasion is on the grievant.

*Final Determination:* This grievance process is available only after a final determination within the relevant School or College has been reached. This provision is intended to require the grievant to exhaust the remedies available within the relevant School or College before appealing to the Graduate Dean. In the case of a student in an interdisciplinary program who does not yet have a chair and/or committee assembled, the Dean of the Graduate School shall make a final determination in the student’s case subject thereafter to the appeal contemplated by this policy. Appeal from the Graduate School Dean’s decision follows this same procedure, except that the GRP shall be constituted by the Office of the Provost from the pool of GCGC members. Written notice of the constitution of the GRP in the case of a student in an interdisciplinary program without a chair or committee, shall be given by the Office of the Provost to all parties to the grievance within ten (10) days after the grievance review request is properly filed. All other deadlines, requirements, procedures, and the hearing format remain the same.

*Originals:* Wherever possible, the party in possession of an original document in support of or rebuttal to or at issue in the grievance shall provide it to the GRP within the time frames set out in the Hearing Materials and Preparation Deadlines. If a party has only a copy of a document not received by him, her, or it, the copy shall serve as an original. Digital documents or email messages in contention shall be printed and may then serve as originals.

*Party:* A party is the student grievant or the individual, program, department, School or College, or University agency or administrator against whom the student brings his or her grievance.

*Time Limits:* All time limits shall be calculated based on working days of the Fall and Spring Semesters, excluding reading and exam periods and University holidays. Grievances originally filed after the end of the Spring semester will be heard at the beginning of the following Fall Semester. Any stated time limit herein may be extended with the written consent of the grievant and the Dean of the Graduate School.

*Written:* Any document to which these guidelines refer as written signifies paper (hard) copy. Email messages and digital or other electronic versions do not meet the requirement that a form or notice be provided in writing. However, a party may transmit a digital version of any written document by email in addition to providing it in paper form.

**DEADLINES FOR HEARING MATERIALS, PREPARATION, AND WITNESS IDENTIFICATION**

All materials to be considered for review by the members of the GRP must be submitted in writing to the Office of the Dean of the Graduate School at least fourteen (14) days before the scheduled date of the hearing, at which time such materials will be distributed to all
parties to the grievance and to the members of the GRP. Thereafter, to the extent that any of the parties wishes to have additional materials considered by the GRP, such materials must be received by the Graduate School no later than seven (7) days before the scheduled date of the hearing, at which time all such additional written materials will be distributed to the parties as well as to the members of the GRP. Any party submitting written materials for consideration shall submit the original(s) and five (5) copies thereof to the Office of the Graduate Dean at his, her, or its own expense.

The name of any witness to be called by any party at the hearing shall be provided in writing to the Office of the Graduate Dean no less than five (5) days before the scheduled date of the hearing.

HEARING

The grievance review hearing is chaired by a designated member of the GRP. The hearing is staffed by the non-voting Administrative Assistant of the Dean of the Graduate School, who will record it for archival purposes only. The hearing will proceed as follows:

a. GRP chair's introduction, summary of issues, and process overview.
b. Student's presentation of issues (15 minutes maximum).
c. University representative's presentation of issues (15 minutes maximum).
d. Optional: Presentation(s) by witnesses (limited to 3 per side and a maximum of 15 minutes total per side).
e. Questions by members of the GRP.
f. All presenters and witnesses are excused.
g. Deliberation by GRP.

Presentation of the issues should be concise and relevant. Undoubtedly the dispute is somewhat complex or it would not have reached this stage. Points of dispute or ambiguity may be summarized or illustrated by anecdote at the hearing. Experience suggests, however, that the best approach is to minimize formal presentations and allow the GRP members maximum time for questions.

GRP DECISION AND AUTHORITY

No additional substantive information may be submitted by any party following the hearing, unless requested by the grievance review panel. The GRP may but need not seek additional information from other sources during its deliberations, which will be conducted in closed session. Following its deliberations, and within ten (10) days of the date of the grievance review hearing, the GRP will make its confidential advisory recommendation to the Dean of the Graduate School [Office of the Provost in the event of a student in an interdisciplinary program who does not yet have a chair or committee]. The subsequent decision by the Dean of the Graduate School [Office of the Provost], which shall be rendered within ten (10) days of the GRP's recommendation, is final.

Note: The above guidelines pertain only to matters which do not involve representation by an attorney. If an attorney is involved in the grievance, the Office of Legal Counsel at the University should be contacted.

MODIFICATIONS

These procedures may be modified or withdrawn with or without notice.
ADMISSION

ELIGIBILITY FOR ADMISSION
In addition to holding the baccalaureate degree from an institution accredited by SACS or another regional accrediting body, the applicant for admission to the Graduate School should have the prerequisite coursework required by the program to which he/she is applying. In general, those applying for graduate admission should have achieved an overall average grade of “B” or better (3.0 G.P.A. on a 4.0 scale). Foreign students will be required to give evidence of adequate knowledge of English through a TOEFL or IELTS test score. University of Miami faculty members above the rank of instructor are not eligible to apply for the doctorate at the University of Miami. (Note: Faculty from the School of Nursing and Health Sciences and from the Physical Therapy program are permitted to pursue doctoral degrees in their home program/school.)

For specific admission requirements see also statements of the various programs.

Admission of a student to the University of Miami for any semester does not imply that such student will be re-enrolled in any succeeding academic semesters.

All those wishing to take courses for graduate credit, whether or not they wish to become candidates for a degree, must make application for admission directly to the program of interest prior to registration.

REQUIREMENTS FOR ADMISSION APPLICATION
1. The completed online application form
2. Official transcripts of all college work, both undergraduate and graduate
3. The official score report of the appropriate entrance examination

| GRE | All applicants must submit recent (within five years) Graduate Record Examination (GRE) scores which include 1) the aptitude portion (verbal & quantitative); 2) the most relevant advanced test in the major field if required by the program. GRE scores are valid for 5 years after the test date. |
| GMAT | Applicants for the Master or Ph.D. of Business Administration, the Master of Professional Accounting, the Master of Science in Management Science (Operations Research/Applied Statistics), or Taxation must submit the Graduate Management Admissions Test (GMAT) scores. GMAT scores are valid for 5 years after the test date. |
| TOEFL/IELTS | International applicants whose native language is not English must take the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS) and the Graduate Record Examination. The TOEFL and IELTS scores are valid for 2 years after the test date. |
4. Letters of recommendation sent directly to the graduate program director of the academic program.

5. Other requirements may be required/requested by individual programs. Contact the specific program to which you are applying for their requirements, or for exemptions from the entrance examination.

6. Application fee of $65.

7. All materials and the fee should be sent directly to the School or academic department as indicated on the application.

_Materials submitted in support of an application cannot be released for other purposes nor returned to the applicant._

**CATEGORIES OF ADMISSION**

1. Regular admission with or without specified deficiencies. Under circumstances in which it is difficult to evaluate the academic background of intellectually qualified applicants, they may be admitted with specified deficiencies. Such status is often appropriate for foreign students. Only one semester or one summer session of study in deficiency status is permitted and the student who fails to qualify at the end of that time will be requested to withdraw from the Graduate School.

2. Post Baccalaureate. This category provides an opportunity for graduate study for
   a. qualified applicants who, for good reason, do not wish to work toward an advanced degree. This would be appropriate for those students who have special objectives for professional study or scholarly work;
   b. students enrolled in a graduate program elsewhere but desiring to earn graduate credit at the University of Miami for the purpose of transferring it to the other institution;
   c. students already holding the master’s degree or doctorate but who desire additional coursework in their field.

Those admitted to a post-baccalaureate status should realize that their future admission to regular status is improbable unless they achieve the qualifications originally appropriate to admission to those categories. This is to say that the mere accumulation of graduate course credits is not sufficient to permit entrance into another graduate category. No more than a total of twelve (12) credit hours may be taken while in post-baccalaureate status.

Transient students described in (b) above should have sent to the Graduate School a letter from the Dean of the School of the student’s program they expect to earn a degree, stating that they are in good standing there and have permission to transfer credit. If possible, this letter should indicate specific courses to be taken. The students described in (c) above should have a transcript showing their most recent graduate work and graduate degree [to be sent directly by the issuing institution to the Graduate School].

3. Certification/Professional Goals. This category provides an opportunity for graduate study for qualified teachers or professionals who do not wish to work toward an advanced degree but who for professional reasons need to continue to take graduate courses and have already taken 12 credits in Post-Baccalaureate Status. No credit taken in this status can be applied toward a graduate degree at the University. A letter explaining the need for the course work by the student’s employer must accompany the application.
Every applicant for admission can be assured that all credentials will be carefully studied in an effort to select appropriately qualified students. Each application for admission is examined by the members of the faculty responsible for the graduate program. The program informs each applicant of the results. It is expected that most applicants for admission will be candidates for an advanced degree. Except under unusual circumstances those who already hold an advanced degree are not admitted to candidacy for the same degree. Graduate programs vary as to whether students who do not hold the Master’s degree are required to initiate graduate studies at that level.

Applicants should note the following:

1. M.B.A. applicants should send applications and all documents to the Office of Graduate Business Programs in the School of Business Administration; P.O. Box 248505, Coral Gables, FL 33124. For further information you may contact mba@miami.edu.
2. all other correspondence, applications and documents should be sent directly to the academic department;
3. no action is taken until a file is complete and all documents are available;
4. application files should be complete at least one month before registration, much earlier for some applications, as specified elsewhere in this Bulletin;
5. admission to graduate status does not imply admission to candidacy for a degree;
6. some departments close admissions early because of limited capacity;
7. materials submitted in support of an application are not released for other purposes and cannot be returned to the applicant.

International Students Admissions

All international students who have been admitted to a program of full-time study at the University of Miami need to enter the U.S. on a student visa. To apply for an F-1 visa, you must provide the U.S. Embassy or Consulate with a Form I-20 or DS-2019, passport, statement of funds, and other documents as required by the U.S. Embassy or Consulate. Please visit the International Student and Scholar Services (ISSS) website at www.miami.edu/isss for further information regarding visas, travel, pre-arrival information, etc. The Form I-20 or DS-2019 can only be issued after you have been admitted and have submitted proof of adequate financial support for your studies and living expenses. For questions regarding issuance of the Form I-20 or DS-2019, please contact your individual department.

DUAL DEGREE AND ACCELERATED DEGREE PROGRAMS

The University offers unique combined degree programs that culminate with students receiving both the undergraduate and graduate degrees concurrently or an accelerated program of study in which they receive an undergraduate degree and then a graduate degree the following year. These programs are intended for exceptional students to acquire both undergraduate and graduate degrees, in five years rather than the 4 plus 2 years (approximately) that is traditionally expected.

Please note: Many financial aid programs, including those offered by the University and the federal and state governments are restricted to coursework required to complete an undergraduate degree.
Requirements:

Students must have undergraduate student status and a cumulative G.P.A. of at least 3.0 at the time of application. Students should discuss the program and possibility of entering the program with an academic advisor. The program may require application at the time of matriculation to the undergraduate degree or prior to the beginning of final exams in the junior year.

Undergraduate students must take the GRE Examination before the end of their classification as a senior and attain a combined score of more than 1000 on the verbal and quantitative portions.

Once admitted into a dual degree or accelerated program:

In their senior year, students may take a maximum of twelve (12) graduate credits, with a maximum of six (6) credits per semester. While in senor status, to register, students must complete and submit the Graduate School's Application for Undergraduates to Take Graduate Coursework form which is available at www.miami.edu/gs/index.php/graduate_school/forms/. This form must accompany the Add/Drop and/or Course Request form to ensure that students are registered with the correct registration status. Add/Drop and/or Course Request forms without this approval form will not be processed. Undergraduate students must register for courses with graduate status in the Office of the Registrar. This process cannot be facilitated via online registration.

Financial Implications:

Many financial aid programs, including those offered by the University and the federal and state governments are restricted to coursework required to complete an undergraduate degree.

Students are eligible for undergraduate aid only as long as they are undergraduates. Students enrolled in combined or accelerated degree programs are permitted undergraduate federal and University aid for a maximum of four academic years or to the point at which the number of graduate hours in a term exceeds the number of undergraduate hours, whichever comes first. During that time frame the student's undergraduate enrollment status will be determined using only undergraduate level courses in which the student enrolls. Graduate level courses in which the student enrolls during such semesters will not be used to determine the student's undergraduate enrollment status. Once a student is registered at the graduate level for financial assistance his/her status is considered graduate for all subsequent semesters.

Once registered as a graduate student, a student cannot revert to undergraduate status.

For further information, contact the Office of Financial Assistance at ofas@miami.edu, call (305) 284-5212, or visit the office at Rhodes House (Building 37). Office hours are 8:30 a.m. to 5:00 p.m., Monday through Friday.

Graduation Clearance Requirements:

For dual degree programs, the student must apply for undergraduate and graduate graduation at the same time. Degrees from dual degree programs are conferred at the same time.
For accelerated degree programs, the student must apply for undergraduate graduation in one semester, and for graduate graduation in a subsequent semester.

The student must meet the requirements of the Graduate School specified in the Bulletin for the awarding of the graduate degree.

Students enrolled in a dual degree or accelerated program can take a maximum of six (6) graduate credits per semester in their senior year for a maximum of twelve (12) graduate credits without incurring additional costs if they are full-time undergraduate students during this period.

Students should register for courses towards their graduate degree as "G" credits and not as "U" credits. These registrations must be completed prior to taking courses. Retroactive add/drops will not be processed.

Summary of Guidelines for Dual Degree and Accelerated Programs

- Take at least 12 undergraduate credits per semester. This qualifies you for the opportunity to take up to 6 graduate credits per semester at no additional cost.
- Graduate credits can be taken only in the senior year in a dual degree or accelerated program (based on the number of credits earned towards the undergraduate degree).
- The maximum number of graduate credits allowed per semester is six (6).
- The maximum number of graduate credits the undergraduate student can take at no additional cost is twelve (12).
- The Application for Undergraduates to take Graduate Coursework form should be completed and all signatures must be obtained before registering for graduate credits.
- The student can change his/her status to "graduate", or their status might be determined to be "graduate" for financial aid purposes during or at the completion of the senior year. This will make the student eligible for graduate financial aid (for US citizens or permanent residents).
- The student cannot be a full-time undergraduate (taking 12 or more undergraduate credits) and a full-time graduate (taking 9 or more graduate credits) at the same time.
- Once a student's status changes to graduate (or after they have taken a full load of graduate credits) their status cannot revert to undergraduate status.
- In a dual degree or accelerated program, an undergraduate student cannot take graduate credits in any other year except in the senior year.
- The student should avoid taking any undergraduate credits after the student's status has changed to graduate.

FOR UNIVERSITY OF MIAMI UNDERGRADUATES

Undergraduates Taking Graduate Coursework. University of Miami undergraduates within 30 credits of meeting the requirements for the Baccalaureate Degree may be considered for concurrent admission to graduate study in non-degree graduate status, and in this status may take and receive credit for graduate courses, while completing the requirement for the baccalaureate. The application may be found at https://www6.miami.edu/grad/forms/ApplicationforUndergraduatetstoTakeaGraduateCourse.pdf.
Admission to Graduate Status requires:

1. Must have a minimum of 3.000 G.P.A.

2. The submission of an Undergraduates to Take a Graduate Course form (which can be obtained at the Graduate School) which will not require the application fee;

3. The written approval of the Chairman of the Department, the Dean of the Undergraduate School or College, and of the Graduate Dean prior to registration on the form.

Admission to Graduate status does not automatically admit the student, upon graduation, to status as an applicant for a graduate degree at the University of Miami.

The graduate credits earned may NOT be used to meet undergraduate graduation requirements or be used to meet the 120 credit hour requirements at the University of Miami.

No more than six (6) hours credit may be taken in one semester, and no more than a total of twelve (12) hours credit may be taken while in Graduate Status. Students may take no more than 15 credits of combined undergraduate and graduate courses per semester.

Students electing Graduate status must register and be processed centrally at the Office of the Registrar, Whitten University Center, Room 121.

**READMISSION**

Unless a leave of absence has been requested and approved, students who have not been continuously enrolled for sessions must request readmission. Contact the appropriate program office well in advance of registration. If additional college work has been completed elsewhere since the last enrollment at the University of Miami, an official transcript of this will be required. Recency of credit rules will apply. The application for readmission to the Graduate School may be found at [https://www6.miami.edu/grad/forms/ApplicationforReadmission.pdf](https://www6.miami.edu/grad/forms/ApplicationforReadmission.pdf). If you are an applicant for readmission and also an international student, please contact the Office of International Admission at isss@miami.edu and (305) 284-2928.
DEGREE PROGRAMS

The University of Miami offers majors leading to graduate degrees as follows:

- **MASTER OF ARCHITECTURE (M. Arch.)**
- **MASTER OF ARCHITECTURE IN URBAN DESIGN (MUD)**
- **MASTER OF ARCHITECTURE IN REAL ESTATE AND URBANISM (MRED&U)**
- **MASTER OF ARTS (M.A.)** with concentrations in the following:
  - Applied Marine Physics
  - Art History
  - Art Presenting
  - Communication
    - Communication Studies
    - Film Studies
    - Television Broadcast
  - Print Journalism
  - Public Relations
  - Spanish Print in Journalism
  - Economics
  - English
  - Geography and Regional Studies
  - History
  - International Administration
  - International Studies
  - Journalism
  - Latin American Studies
  - Marine Affairs and Policy
  - Marine Biology and Fisheries
  - Marine Geology and Geophysics
  - Marine and Atmospheric Chemistry
  - Mathematics
  - Meteorology and Physical Oceanography
  - Philosophy
  - Public Relations/Media Management
  - Sociology

- **MASTER OF ARTS IN LIBERAL STUDIES (M.A.L.S.)**
- **MASTER IN ACCOUNTING (M.P.Acc.)**
- **MASTER OF BUSINESS ADMINISTRATION (MBA)**
- **MASTER OF BUSINESS ADMINISTRATION EXECUTIVE TRACKS**
  - Gables, Nassau, Orlando, DelRay, Tampa 1&2, Health Administration, Stragglers, International Business, Working Professionals, Puerto Rico
- **MASTER OF SCIENCE IN EDUCATION (M.S.Ed.)** with concentrations in the following:
  - Advanced Professional Studies
  - Community and Social Change
  - Counseling and Research
  - Early Childhood Special Education
  - Education
  - Education and Social Change
  - Elementary Education
  - Exercise Physiology
  - Higher Education/Enrollment Management
  - Higher Education/Student Life & Development
  - Marriage and Family Therapy
  - Counseling Mental Health
  - Reading
  - Research, Measurement and Evaluation
  - Special Education
  - Sport Administration (Focus athletics or recreational sports)
  - Sports Medicine
  - STEM Education

- **MASTER OF FINE ARTS (M.F.A.)** with concentrations in the following:
  - Art (Studio Work)
  - Digital Imaging
  - Painting
  - Sculpture
  - Graphic Design / Multimedia
  - Ceramics / Glass
  - Photography/Digital Imaging
  - Printmaking
  - Creative Writing
  - Motion Pictures
  - Production
  - Producing
  - Screenwriting
  - Printmaking
MASTER OF MUSIC (M.M.) with concentrations in the following:

<table>
<thead>
<tr>
<th>Concentration</th>
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<tbody>
<tr>
<td>Accompanying and Chamber Music</td>
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<tr>
<td>Art Presenting</td>
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<tr>
<td>Choral Conducting (A.D.)</td>
</tr>
<tr>
<td>Collaborative Piano</td>
</tr>
<tr>
<td>Composition</td>
</tr>
<tr>
<td>Electronic Music</td>
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<tr>
<td>Instrumental Conducting (A.D.)</td>
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<tr>
<td>Instrumental Performance (A.D.)</td>
</tr>
<tr>
<td>Jazz Pedagogy</td>
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<tr>
<td>Jazz Performance</td>
</tr>
<tr>
<td>Keyboard Performance and Pedagogy</td>
</tr>
<tr>
<td>Media Writing and Production</td>
</tr>
<tr>
<td>Multiple Woodwinds</td>
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<tr>
<td>Music Business and Entertainment Industries</td>
</tr>
<tr>
<td>Piano Performance (A.D.)</td>
</tr>
<tr>
<td>Music Education/String Pedagogy</td>
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<tr>
<td>Music Theory</td>
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<tr>
<td>Music Therapy</td>
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<tr>
<td>Musicology</td>
</tr>
<tr>
<td>Studio Jazz Writing</td>
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<tr>
<td>Vocal Performance (A.D.)</td>
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</tbody>
</table>

MASTER OF SCIENCE (M.S.) with concentrations in the following:

<table>
<thead>
<tr>
<th>Concentration</th>
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<tbody>
<tr>
<td>Applied Marine Physics</td>
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<tr>
<td>Biology</td>
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<tr>
<td>Biostatistics</td>
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<tr>
<td>Chemistry</td>
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<tr>
<td>Computer Information Systems</td>
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<tr>
<td>Computer Science</td>
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<tr>
<td>Engineering</td>
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<tr>
<td>Environmental Health and Safety</td>
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<tr>
<td>Information Technology</td>
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<tr>
<td>Management Science</td>
</tr>
<tr>
<td>Management of Technology</td>
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<tr>
<td>Marine Affairs and Policy</td>
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<tr>
<td>Marine Biology and Fisheries</td>
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<tr>
<td>Marine Geology and Geophysics</td>
</tr>
<tr>
<td>Marine and Atmospheric Chemistry</td>
</tr>
<tr>
<td>Mathematics</td>
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<tr>
<td>Meteorology and Physical Oceanography</td>
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<tr>
<td>Oceanography</td>
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<tr>
<td>Occupational Ergonomics and Safety</td>
</tr>
<tr>
<td>Physics</td>
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<tr>
<td>Professional Management</td>
</tr>
<tr>
<td>Psychology</td>
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<tr>
<td>Public Health</td>
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<tr>
<td>Statistics</td>
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<td>Taxation</td>
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</tbody>
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MASTER OF SCIENCE IN ARCHITECTURAL ENGINEERING (M.S.A.E.)

MASTER OF SCIENCE IN BIOMEDICAL ENGINEERING (M.S.B.E.)

MASTER OF SCIENCE IN CIVIL ENGINEERING (M.S.C.E.)

MASTER OF SCIENCE IN ELECTRICAL AND COMPUTER ENGINEERING (M.S.E.C.E.)

MASTER OF SCIENCE IN INDUSTRIAL ENGINEERING (M.S.I.E.)

MASTER OF SCIENCE IN MECHANICAL ENGINEERING (M.S.M.E.)

MASTER OF SCIENCE IN MUSIC ENGINEERING TECHNOLOGY (M.S.M.E.T.)

MASTER OF SCIENCE IN NURSING (M.S.N.)

MASTER OF SCIENCE IN TAXATION (M.S.Tax.)

MASTER OF PUBLIC ADMINISTRATION (M.P.A.)

MASTER OF PUBLIC HEALTH (M.P.H.)

SPECIALIST IN EDUCATION (Ed.S.) with concentrations in the following:

<table>
<thead>
<tr>
<th>Concentration</th>
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<tbody>
<tr>
<td>Advanced Professional Studies</td>
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<tr>
<td>Early Childhood Special Education</td>
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<tr>
<td>Education</td>
</tr>
<tr>
<td>Higher Education Leadership</td>
</tr>
<tr>
<td>Music Education</td>
</tr>
<tr>
<td>Reading</td>
</tr>
<tr>
<td>Special Education</td>
</tr>
<tr>
<td>STEM Education</td>
</tr>
</tbody>
</table>

SPECIALIST IN MUSIC EDUCATION (SPEC.M.)

DOCTOR OF MUSICAL ARTS (D.M.A.) with concentrations in the following:

<table>
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<tr>
<th>Concentration</th>
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<tbody>
<tr>
<td>Accompanying and Chamber Music</td>
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<tr>
<td>Instrumental Performance</td>
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<tr>
<td>Jazz Composition</td>
</tr>
<tr>
<td>Keyboard Performance and Pedagogy</td>
</tr>
<tr>
<td>Multiple Woodwinds</td>
</tr>
<tr>
<td>Performance (Applied Music)</td>
</tr>
<tr>
<td>Piano Performance</td>
</tr>
<tr>
<td>Jazz Performance</td>
</tr>
<tr>
<td>Vocal Pedagogy</td>
</tr>
<tr>
<td>Vocal Performance</td>
</tr>
</tbody>
</table>
The Graduate School

- **DOCTOR OF NURSING PRACTICE (D.N.P.)**
- **DOCTOR OF PHYSICAL THERAPY (D.P.T.)**
- **Higher Education Leadership (Ed.D.)**
- **DOCTOR OF PHILOSOPHY (Ph.D.)** with concentrations in the following:

<table>
<thead>
<tr>
<th>Applied Marine Physics</th>
<th>Ergonomics</th>
<th>Philosophy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biochemistry and Molecular Biology</td>
<td>Exercise Physiology</td>
<td>Physical Therapy</td>
</tr>
<tr>
<td>Biomedical Engineering</td>
<td>History</td>
<td>Physics</td>
</tr>
<tr>
<td>Biostatistics</td>
<td>Human Genomics and Genetics</td>
<td>Physiology and Biophysics</td>
</tr>
<tr>
<td>Business Administration</td>
<td>Industrial Engineering</td>
<td>Psychology</td>
</tr>
<tr>
<td>Cancer Biology</td>
<td>International Studies</td>
<td>Romance Studies</td>
</tr>
<tr>
<td>Chemistry</td>
<td>Marine and Atmospheric Chemistry</td>
<td>Research and</td>
</tr>
<tr>
<td>Civil Engineering</td>
<td>Marine Biology and Fisheries</td>
<td>Evaluation/Exercise</td>
</tr>
<tr>
<td>Communication</td>
<td>Marine Geology and Geophysics</td>
<td>Romance Languages</td>
</tr>
<tr>
<td>(Communication, Film)</td>
<td>Mathematics</td>
<td>French</td>
</tr>
<tr>
<td>Computer Science</td>
<td>Mechanical Engineering</td>
<td>Spanish</td>
</tr>
<tr>
<td>Counseling Psychology</td>
<td>Meteorology and Physical</td>
<td>Sociology</td>
</tr>
<tr>
<td>Economics</td>
<td>Oceanography</td>
<td>Teaching and Learning</td>
</tr>
<tr>
<td>Electrical and Computer Engineering</td>
<td>Microbiology and Immunology</td>
<td>Language and Literacy</td>
</tr>
<tr>
<td>English</td>
<td>Molecular and Cellular Pharmacology</td>
<td>Learning in Multilingual settings</td>
</tr>
<tr>
<td>Epidemiology and Public Health</td>
<td>Molecular Cell and Developmental Biology</td>
<td>Mathematics and Science</td>
</tr>
<tr>
<td>Environmental Science and Policy</td>
<td>Music Education</td>
<td>Education</td>
</tr>
<tr>
<td></td>
<td>Music Education with Music Therapy</td>
<td>Special Education</td>
</tr>
<tr>
<td></td>
<td>Neuroscience</td>
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<td></td>
<td>Nursing</td>
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</tbody>
</table>
INTERDISCIPLINARY GRADUATE STUDIES - Dept. Code: IDS

The Graduate School is no longer accepting applications for the IDS program. This will not affect current IDS students.

ENVIRONMENTAL SCIENCE AND POLICY – Dept. Code: ECSD

Through the Graduate School, The Abess Center for Ecosystem Science and Policy offers an interdisciplinary course of study leading to a Ph.D. Details regarding areas of specialization can be found at the Abess Center website at http://www.cesp.miami.edu/. In most cases, doctoral students are supported by research assistantships which include tuition remission and a monthly stipend. All students are also required to serve satisfactorily for one term as teaching assistants in the Abess Center undergraduate program.

Prerequisite

Students admitted to the program must have earned a Bachelor's or Master's degree and should display a strong interest in the interdisciplinary study of ecosystem science and policy.

Ph.D. Degree Requirements

Completion of the Ph.D. will take approximately five years. All students are also required to:

- Complete a minimum of 60 credits, of which at least 26 must be for coursework taken while in residence at the University of Miami. (Students entering the program with a Master's degree in a related field may be given credit for up to 24 course credits.)

- Complete 12 credits worth of coursework in the following core courses:
  - ECS 501 – Interdisciplinary Environmental Theory
  - ECS 503 – Interdisciplinary Environmental Methods
  - ECS 505 – Interdisciplinary Environmental Law and Policy
  - ECS 507 – Interdisciplinary Environmental Decision Analysis

- Submit, by the end of their second semester, a proposed group of additional courses, totaling at least 18 hours, related to their research interest and intended dissertation research area. This group of courses requires approval of both the student's advisor and the Director of Graduate Studies.

- Accrue at least 13 credits worth of dissertation research.

- Pass written and oral comprehensive examinations following the conclusion of the core series of courses, usually at the end of the first year. A majority of the examination committee must be members of the Graduate Faculty of the University. In the event of failing to pass an examination, students are required to retake and pass the examination within one calendar year. By the end of the second year, students must present and defend a research proposal. Following successful completion of the comprehensive examination and research proposal defense, the student may apply to candidacy for the degree. Any student who fails to be admitted
to candidacy for the degree within this two-year period can be dismissed from the program.

- Convene a 4-member dissertation committee by the end of the first year.
- Write and defend a dissertation research proposal by the end of the second year. Students may proceed with the dissertation after the dissertation committee has been appointed and the Director of Graduate Studies and the Graduate School have accepted the dissertation proposal. The dissertation must be an investigation of a substantial scholarly topic and bridge both scientific and policy aspects of the topic area.
- Successfully complete an oral defense of the dissertation.

[Environmental Science and Policy Course Listing]
UM INTERNATIONAL EDUCATION AND EXCHANGE PROGRAMS
Dept. Code: SAP

Opportunities for study abroad may be available for some graduate degree programs during the summer, fall, spring and intersession terms.

Students may participate in programs led by faculty members or may participate in semester exchange program options offered by the MAIA program.

For further information contact: UM International Education and Exchange Programs, PO Box 248263, Coral Gables, FL 33124-1610, (305) 284-3434, e-mail: ieep@miami.edu.

In some programs it is possible to earn graduate credits for study taken abroad. The curriculum must be worked out by the student in conjunction with an advisor.
THE MASTER’S DEGREE

The minimum residence requirement is two semesters in full-time study or the equivalent in part-time work. In practice, most students need at least three semesters, or two semesters plus summer work, to complete degree requirements.

FOREIGN LANGUAGE

The requirements in a foreign language or languages are established by the student’s program. In those cases where the program deems it necessary that the student have competency in a foreign language, the student will be required to demonstrate such competence by examination in one or more languages. The choice of language or languages required will be by the program.

THESIS

Decision as to the thesis subject must be approved by the program. The thesis committee will consist of not less than three members. At least one of these must be a regular member of the Graduate Faculty of the University of Miami, and one must be from outside of the program awarding the degree. The committee is nominated by the Graduate Program Director of the department or program concerned. The duties of the thesis committee are similar to those of the dissertation committee. Thesis Committees cannot be appointed prior to admission to candidacy. The student who presents a thesis must enroll for at least six hours of thesis credit. Ordinarily no more than six credits may be granted.

When a student has completed coursework, it is recommended that those students in programs requiring a thesis or dissertation make their first appointment with the Dissertation Editor at the Graduate School once their thesis topic has been approved by the major department. The Dissertation Editor will provide information on the guidelines and deadlines that will become critical in the final months of the degree process or information can be downloaded from www.miami.edu/etd. The Graduate School office telephone number is (305) 284-4154, the email address is grad.dissertation@miami.edu.

Master's degree students who are required to write a thesis must defend their thesis by the date specified in the academic calendar and upload one Dissertation Editor-approved PDF to the ETD database and submit final paperwork to the Graduate School by the last day of exams in the semester the student wishes to graduate. It is recommended that students begin the process early in the semester by discussing with their advisors a suitable timetable for meeting these deadlines. All information pertaining to the formatting and electronic guidelines for electronic thesis and dissertation submission can be found at www.miami.edu/etd. The Graduate School also encourages students to contact the Dissertation Editor early in the semester at grad.dissertation@miami.edu if they have questions regarding any aspect of the ETD process.

One Dissertation Editor-approved PDF conforming in style to the formatting standards set by the Graduate School must be uploaded to the ETD database and final paperwork handed in to the Office of the Graduate School on or before the last day of exams in the semester the student wishes to graduate. It is the duty of the student to acquire a copy of the guidelines for preparing theses and dissertations and to conform to the requirements therein. Each dissertation must be accompanied by one certificate of approval of oral defense of thesis signed by all members of the Committee and one ETD Availability Agreement form signed by the student and Committee Chair. The forms can be downloaded from www.miami.edu/etd.
Electronic Theses and Dissertation (ETD) Embargo Policy

Graduate students can elect to withhold their electronic thesis or dissertation for up to two years before the work is available for download from the University of Miami’s Scholarly Repository, http://scholarlyrepository.miami.edu/. The metadata for all theses and dissertations regardless of the availability option elected (i.e., open access, UM campus only, or embargo) will be immediately available for viewing in the university’s Scholarly Repository after the Dissertation Editor has approved and released the thesis or dissertation to the repository. If embargo is elected by the student, the existence of the student’s information page will appear in the Scholarly Repository right away displaying title, defense date, abstract, committee, keywords, etc., but the PDF of the electronic thesis or dissertation will not be downloadable until the term of embargo elected has expired. After the elected embargo period has expired the electronic thesis or dissertation will be released for open access in the Scholarly Repository. Students requesting embargo should carefully review the details of embargo election described in the ETD Availability Agreement form posted at www.miami.edu/etd to ensure they fully understand the terms of access for their embargoed work.

FINAL EXAMINATION

A final public oral defense of the thesis is required. However, none but the members of the thesis committee may interrogate the candidate. In addition there may be required, if desired by the program, a final written integration examination to test the candidate’s ability to integrate the whole graduate program and the thesis in relation to it. These examinations must be held at least two weeks prior to commencement.

RESEARCH IN RESIDENCE

Once a student has completed all course and required research credits, he or she must enroll in Research in Residence status until the degree has been granted. Research in Residence status is considered full-time enrollment. Time restrictions on obtaining degrees will be strictly enforced and can be waived only by the Dean of the Graduate School. (See Recency of Credit and Time to Completion sections of the Bulletin.) Research in Residence students, while not required, may purchase or receive any perquisites that are normally available to graduate students.

COMPREHENSIVE EXAMINATION

In most programs a comprehensive examination, either written, oral or both, is a requirement. When the thesis is not a part of the program, an examining board, at least one of whose members must be a regular member of the Graduate Faculty, will be appointed by the program.

A student failing the comprehensive may be allowed one opportunity to retake it if the students committee so advises. The re-examination may not be taken during the same semester or summer session, and must be taken within one calendar year.
TRANSFER OF CREDIT

Upon recommendation of the major program and the approval of the Graduate School, a maximum of six semester hours of graduate credit, with grades of B or above, may be transferred from another accredited graduate institution, in partial satisfaction of a master’s degree requiring less than 36 semester hours. Nine hours of graduate credit may be approved for transfer to a degree program requiring 36 semester hours or more. Work taken more than six years prior to transfer will not be accepted. Work taken by extension, correspondence or online is not acceptable. All work transferred is subject to examination by the program. In no case will credit be transferred until the student has completed acceptably an equivalent number of credits at the University of Miami. Any student wishing to transfer credit must be enrolled at the University of Miami during the time of transfer. The satisfaction of the requirements of another university does not relieve the student from the University of Miami’s requirements. An official transcript of work to be transferred must be on file in the Graduate Office. Credits that pertain to or have been counted toward another degree cannot be transferred. Students enrolled in the Master of Business Administration program are not eligible for credit transfers.

Exceptions must be approved by the Dean of the Graduate School.

No transferred credits are calculated into the University of Miami G.P.A.

A SECOND MASTER’S DEGREE

A student enrolled in a University of Miami master’s degree program or holding a University of Miami master’s degree may earn a second master’s degree in a related area at the University by completing a minimum of 21 hours in residence toward the second degree, as long as all program and admission requirements for the degree are met. Each degree must have a separate thesis if two thesis options are elected. The second program decides if the areas are related enough to qualify for the reduced number of credits. The student must contact the second program during the application process for the second program to determine if the areas are related enough to qualify for the reduced number of credits.
THE DOCTORAL DEGREE

(For Ph.D., D.M.A., and Ed.D. candidates only)

GENERAL

The Graduate School does not specify course requirements for the Ph.D. However, the Graduate School will not, ordinarily, approve the taking of the qualifying examination until the student has had a minimum of one continuous academic year of graduate work in courses, seminars, and directed or tutorial study. Sixty credits beyond the baccalaureate degree are the minimum requirement for the Ph.D., and not less than half of the total credits must be in work open only to graduate students. At least 24 must have been taken in residence at the University of Miami. A minimum of 12 dissertation credits must be taken. Graduate students studying for the Ph.D. who have received their master's degree in the same field must take at least twenty-four (24) hours in residence at the University of Miami in doctoral status.

The specific course requirements for the Ph.D. are established by the major department or program which may require such additional graduate credit as it deems necessary. Such requirements will be found in that part of the Bulletin which lists course offerings.

REGISTRATION

To maintain status as a graduate student, registration in each fall and spring semester is required. Otherwise, admission lapses and permission to re-enter must be granted. Doctoral students for whom course work is no longer appropriate and who are engaged on their dissertation should consult the following section.

DISSERTATION

A student must take a minimum of 12 hours of dissertation research except where otherwise stated. Not more than 12 hours of research may be taken in a regular semester, nor more than six in a summer session.

Ph.D., D.M.A., Ed.D., or Lecture Recital degree students must defend their dissertation, doctoral essay, or lecture recital essay by the deadline specified in the academic calendar and upload one Dissertation Editor-approved PDF to the ETD database and submit final paperwork to the Graduate School by the last day of exams in the semester the student wishes to graduate. It is recommended that students begin the process early in the semester by discussing with their advisors a suitable timetable for meeting these deadlines. All information pertaining to the formatting and electronic guidelines for electronic thesis and dissertation submission can be found at www.miami.edu/etd. The Graduate School also encourages students to contact the Dissertation Editor early in the semester at grad.dissertation@miami.edu if they have questions regarding any aspect of the ETD process.
One Dissertation Editor-approved PDF conforming in style to the standards set by the Graduate School, must be uploaded to the ETD database and final paperwork handed in to the Office of the Graduate School on or before the last day of exams in the semester the student wishes to graduate. It is the duty of the student to acquire a copy of the guidelines for preparing theses and dissertations and to conform to the requirements therein. Each dissertation must be accompanied by one certificate of approval of oral defense of thesis signed by all members of the Committee and one ETD Availability Agreement form signed by the student and Committee Chair. The forms can be downloaded from www.miami.edu/etd.

Electronic Theses and Dissertations (ETD) Embargo Policy

Graduate students can elect to withhold their electronic thesis or dissertation for up to two years before the work is available for download from the University of Miami’s Scholarly Repository, http://scholarlyrepository.miami.edu/. The metadata for all theses and dissertations regardless of the availability option elected (i.e., open access, UM campus only, or embargo) will be immediately available for viewing in the university’s Scholarly Repository after the Dissertation Editor has approved and released the thesis or dissertation to the repository. If embargo is elected by the student, the existence of the student’s information page will appear in the Scholarly Repository right away displaying title, defense date, abstract, committee, keywords, etc., but the PDF of the electronic thesis or dissertation will not be downloadable until the term of embargo elected has expired. After the elected embargo period has expired the electronic thesis or dissertation will be released for open access in the Scholarly Repository. Students requesting embargo should carefully review the details of embargo election described in the ETD Availability Agreement form posted at www.miami.edu/etd to ensure they fully understand the terms of access for their embargoed work.

RESEARCH IN RESIDENCE

Once a student has completed all course and required research credits, he or she must enroll in Research in Residence status until the degree has been granted. Research in Residence status is considered full-time enrollment. Time restrictions on obtaining degrees will be strictly enforced and can be waived only by the Dean of the Graduate School. Research in Residence students, while not required, may purchase or receive any perquisites that are normally available to graduate students. (See Recency of Credit section.)

RESIDENCE

The student must spend at least two consecutive semesters beyond the first year’s graduate work, wherever taken, in full-time study at the University of Miami. With program approval, a) one summer of full-time study in sessions I and II can be substituted for one semester of residence, or b) full-time study for two successive summers can be substituted for two regular semesters. Residence requirements may be altered only by the Dean of the Graduate School. (At least 24 credits must be taken in residence.)
THE SUPERVISORY AND DISSERTATION COMMITTEES

A supervisory committee is usually appointed when a student is formally admitted to a doctoral program. The committee must be comprised of at least four members; this includes the committee chair, who shall be a member of the program or department of concentration (this includes secondary appointments), as well as a permanent member of the Graduate Faculty. Of the remaining members, it is also required that two shall be members of the program or department of concentration as well as permanent members of the Graduate Faculty, and one from outside the program or department of concentration. A thesis or dissertation committee cannot be chaired by a person unless they hold a higher or equivalent degree as the candidate for the graduate degree. Exceptions to the committee composition may be approved by the chair of the department and Dean of the Graduate School. A department, program, or school / college may require additional members.

This committee is nominated by the chairperson of the program or department concerned. It is appropriate for the chairperson to consult with the student regarding the membership of the committee. The supervisory committee is empowered to plan the course of study for the student; to determine deficiencies, if any; to set language and other requirements; to request applicable transfer of credit where appropriate and to make up and administer the qualifying examination.

When the student is admitted to candidacy, a dissertation committee is formed. This may be the supervisory committee, but it may also be a committee formed anew to undertake the duties of advising and passing upon the dissertation. The dissertation committee is nominated by the department or program concerned, and appointed by the Graduate Program Director and approved by department chair. As with the supervisory committee, it must be comprised of at least four members; this includes the committee chair, who shall be a member of the program or department of concentration, as well as a permanent member of the Graduate Faculty. Of the remaining members, it is also required that two shall be members of the program or department of concentration, as well as permanent members of the Graduate Faculty.

http://www.miami.edu/gs/index.php/graduate_school/current_students/graduate_faculty_list_by_department/ and one from outside the program or department of concentration. A department, program, or school or college may require additional members. The duties of the Dissertation Committee are:

1. To consult with and to advise students on their research;
2. To meet, at regular intervals, to review progress and expected results;
3. To read and comment upon the draft dissertation;
4. To meet, when the dissertation is completed, to conduct the final oral examination and to satisfy itself that the dissertation is a contribution to knowledge and that it is written in lucid and correct English and submitted in approved form.

The candidate is well advised to have a final, acceptable typescript of the dissertation in the hands of each member of his/her committee at a time reasonably in advance of the final defense of the work a minimum of two weeks prior to the defense.
The dissertation may be in another language only if relevant and appropriate to the content of the dissertation and accepted by the dissertation committee. This will be determined on a case-by-case basis. In such cases, an abstract in English will also be attached to the dissertation. The dissertation chair will submit a justification memorandum at the same time that the application for admission to candidacy form is submitted to the Graduate School with and explanation of why the student should be allowed to write their dissertation in a language other than English.

One Dissertation Editor-approved PDF must be uploaded to the ETD database and final paperwork handed in to the Graduate School on or before the date specified in the academic calendar published each session, accompanied by one certificate of approval of doctoral dissertation defense and one ETD Availability Agreement form. It is the duty of the student to acquire a copy of the guidelines for preparing dissertations from the Graduate School or www.miami.edu/etd and to conform to the requirements therein. All dissertations are also published by ProQuest/University Microfilms, Inc.

No student gains the right to be recommended for the degree simply by fulfilling requirements. This right is reserved to the student’s committee. Changes of committee members must be approved by Graduate Program Director, and sent to the Graduate School.

**QUALIFYING EXAMINATIONS**

A written qualifying examination is to be taken by each doctoral degree (Ph.D., D.M.A., D.N.P, D.P.T., Ed.D.) candidate at the time that the student and the Supervisory Committee deem appropriate. The school or major program may specify that its students must take an oral examination as well. In those cases, normally, the student shall pass the written examination before the oral examination is conducted. Upon completion of the examination process, the supervisory committee shall notify the Graduate School and the instructional school or program that the student has passed or failed the examination. A student who fails the examination will be given one opportunity to retake it with the permission of the supervisory committee. After a comprehensive exam is failed for a second time, the student is terminated from the program. Some programs do not administer qualifying examinations during the summer months. Check with the Graduate Program Director for specific program requirements.

**ADMISSION TO CANDIDACY**

When the student has met all requirements and passed the qualifying examinations, admission to candidacy for the degree is approved. No student may receive the degree in the same semester or summer session in which he or she is admitted to candidacy. The student must be admitted to candidacy before the defense of dissertation is scheduled.

**FINAL EXAMINATION**

A final public oral defense of the dissertation is required. Refer to the academic calendar for the deadline regarding dissertation defense for each graduation. Graduate programs set the specific requirements and format of the defense. Please contact your Graduate Program Director for details.
TRANSFER OF CREDIT

Transfer of graduate credit from another institution will not be made until the student has completed a like amount of credit at the University of Miami, and the transfer has been approved by the supervisory committee and the Dean of the Graduate School. Credit transferred is subject to the same recency rules as all other credit counted toward the degree, and is also subject to examination by the program. An official transcript of work to be transferred must be on file in the Graduate School. Credits that pertain to or have been counted toward another degree cannot be transferred.

Florida International University and University of Miami agreement

Effective as of Fall 2007, students may take up to six credits at the host institution as long as the following requirements are met:

1. Must be Ph.D. student or Master’s student in Latin American Studies.
2. Approval from both home and host institution;
3. Approval of Graduate School Deans;
4. Space at the host institution is available.
5. Approval of the Faculty member teaching the course.

Tuition and fees are to be paid at the home institution. Performance level is set at host institution. Contact the Graduate School for more information. The application form can be found at [http://www.miami.edu/gs/index.php/graduate_school/current_students/umfiu_doctoral_exchange_program/](http://www.miami.edu/gs/index.php/graduate_school/current_students/umfiu_doctoral_exchange_program/).
The School of Architecture at the University of Miami offers both a professional and a post-professional Master of Architecture degree.

The School is a member of the Association of Collegiate Schools of Architecture.

The School of Architecture’s location in Coral Gables within the Miami metropolitan area provides an outstanding laboratory for research and advanced study; the challenges of conservation and development are intense in one of the nation’s fastest growing urban areas. These challenges result in an increasing demand for skilled professionals.

Students have the opportunity to work with the faculty in the exploration of theoretical issues as well as in the resolution of practical problems.

The School of Architecture values and sustains a creative, open and supportive environment, emphasizing personalized instruction in small classes and studio courses.

The school’s resources, including an accredited undergraduate program in architecture and a state-of-the-art computer laboratory, are enhanced by the interdisciplinary opportunities offered by the other schools and colleges of the University of Miami. A distinguished faculty is joined each semester by internationally renowned visiting scholars and designers.

All students admitted full time to the Master of Architecture program may be eligible for partial tuition scholarships and/or graduate assistantships, based on academic record.

Scholarships may vary in amounts and are intended to assist the recipient pursue studies as required by the program. Scholarships will be awarded on a competitive basis. Graduate assistantships require service in the form of teaching, research assistance, or other appropriate educational activities as designated by the director of the graduate program.

The school is a member of the Association of Collegiate Schools of Architecture and the Association of Collegiate Schools of Planning, and is fully accredited by the National Architectural Accreditation Board, who asks each school to include the following paragraph on professional degrees in all literature:

*In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted a 6-year, 3-year, or 2-year term of accreditation, depending on the extent of its conformance with established educational standards. Master’s degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education.*

*Doctor of Architecture and Master of Architecture degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree*
ADMISSION REQUIREMENTS

Applications are for the fall semester only. Applications completed by February 1<sup>st</sup> will be given the highest priority. Admission to the graduate program is subject to the rules, regulations and procedures of the Graduate School as stipulated in the University Graduate Bulletin. It is the responsibility of each student to understand these requirements and to ensure that they are met.

The minimum requirements for application to the Master of Architecture Degree program are:

1. 3.0 cumulative grade point average.

2. 1000 cumulative Graduate Record Examination score on verbal and quantitative sections / 550 TOEFL score for international applicants and/or those whose native language is not English.

3. For Master of Architecture: Suburb and Town Design; Master of Architecture: Research - a Professional Degree in Architecture (Bachelor of Architecture or Master of Architecture).

RESOURCES

The school’s resources, including a state-of-the-art computer laboratory, are enhanced by the interdisciplinary opportunities offered by the other schools and colleges of the University of Miami. A distinguished faculty is joined each semester by internationally renowned visiting scholars and designers.

Other programs that offer academic opportunities for graduate architecture students include: the Historic Preservation Certificate, the Suburb and Town Design, the BSAE/MARCH and the BARCH/MBA.

DEGREE PROGRAMS

MASTER OF ARCHITECTURE: PROFESSIONAL DEGREE

The Master of Architecture is designed for college graduates seeking a first professional degree in architecture. It consists of the following two tracks:

3 year Track: A 3 year program for students holding undergraduate degrees in non-design fields. Completion of 105 credit hours required.

Advanced Standing 2 Year Track: A program for students holding a previous non-professional degree in architecture or a closely related field. Completion of 51-60 credit hours required.

Master’s degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree, which, when earned sequentially, compromise an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.
MASTER OF ARCHITECTURE: POST PROFESSIONAL DEGREE

The Master of Architecture post-professional program provides an environment for serious inquiry into the nature of architecture.

Post-professional study is available to students holding an accredited degree in architecture who wish to develop a specialization in architectural theory and practice.

Three areas of study offer students the opportunity to investigate specific aspects of architecture and to elaborate their understanding for future teaching, research, publications and professional practice.

Master of Urban Design

This concentration consists of three semesters of directed study to explore in-depth the existing state of suburbs and cities, study precedents and propose design solutions.

The faculty is dedicated to seeking alternatives to modern patterns of urban growth.

The Miami metropolitan area provides a laboratory for the identification of urban problems and for the exploration of design solutions.

Each semester is comprised of a design studio and a seminar in parallel, studying both the real and ideal solutions for three aspects of town planning: new town design, housing and the redesign of existing situations.

The School of Architecture faculty teaches the curriculum with field condition input from visiting faculty and other experts such as developers, marketing experts and bankers.

Master in Real Estate Development and Urbanism

A one-year interdisciplinary program that will blend the fundamentals of real estate development with the School of Architecture’s strengths in the New Urbanism, community design and civic engagement.

Master of Architecture: Research

This program allows students to specialize in a specific area of study within the context of the discipline.

Each student must complete 36 credits, normally over three semesters. A specific program of study, reflecting the proposed professional objectives, is established for each student. In addition, a six-credit thesis is required.

An advisory committee of the faculty of the school supervises the progress of the students. The program is based on studio work combined with cross-disciplinary and specialized studies.

The program culminates in a comprehensive project tailored to meet the needs of the individual student.
### DEGREE REQUIREMENTS

**Master of Architecture: Professional Degree**  
**3 Year Track - For students with prior non-architecture degrees**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall Semester I</strong></td>
<td></td>
</tr>
<tr>
<td>ARC 501 Design I</td>
<td>6</td>
</tr>
<tr>
<td>ARC 511 Media I: Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ARC 530 Building Technology: Materials and Methods</td>
<td>3</td>
</tr>
<tr>
<td>ARC 567 History of Architecture I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>15</strong></td>
</tr>
<tr>
<td><strong>Spring Semester II</strong></td>
<td></td>
</tr>
<tr>
<td>ARC 502 Design II</td>
<td>6</td>
</tr>
<tr>
<td>ARC 513 Media II: Computing</td>
<td>3</td>
</tr>
<tr>
<td>ARC 531 Building Technology: Structural Systems</td>
<td>3</td>
</tr>
<tr>
<td>ARC 568 History of Architecture II</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>15</strong></td>
</tr>
<tr>
<td><strong>Summer Semester III</strong></td>
<td></td>
</tr>
<tr>
<td>ARC 503 Design III</td>
<td>6</td>
</tr>
<tr>
<td>ARC 532 Building Structures I</td>
<td>3</td>
</tr>
<tr>
<td>ARC 562 Environmental Systems I</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>12</strong></td>
</tr>
<tr>
<td><strong>Fall Semester IV</strong></td>
<td></td>
</tr>
<tr>
<td>ARC 504 Design IV (Comprehensive)</td>
<td>6</td>
</tr>
<tr>
<td>ARC 533 Building Structures II</td>
<td>3</td>
</tr>
<tr>
<td>ARC 563 Environmental Systems II</td>
<td>3</td>
</tr>
<tr>
<td>ARC 500 Theory of Architecture</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>
### Spring Semester V

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 608 Design V (Rome or Miami)</td>
<td>6</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td>History of Architecture Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

### Fall Semester VI

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 609 Design VI</td>
<td>6</td>
</tr>
<tr>
<td>ARC 699 Thesis Preparation</td>
<td>3</td>
</tr>
<tr>
<td>ARC 652 Professional Practice</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

### Spring Semester VII

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 610 Design Degree Project</td>
<td>6</td>
</tr>
<tr>
<td>Professional Elective</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

NOTE: 3 credits must be taken at the student’s preference during Intersession, Spring Break, or Summer II

Curriculum notes: this program assumes that the student has completed college level mathematics and physics.
**Master of Architecture: Professional Degree**  
**Advanced Standing 2 Year Track - For students with non-professional degrees in architecture**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall Semester I</strong></td>
<td>ARC 504 Design IV (Comprehensive)</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Professional Requirements</td>
<td></td>
</tr>
<tr>
<td><strong>Spring Semester II</strong></td>
<td>ARC 608 Design V (Rome or Miami)</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Professional Requirements</td>
<td></td>
</tr>
<tr>
<td><strong>Summer III</strong></td>
<td>Electives</td>
<td></td>
</tr>
<tr>
<td><strong>Fall Semester IV</strong></td>
<td>ARC 609 Design VI (VC or other)</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>ARC 599 Thesis Preparation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Theory Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Professional Requirements</td>
<td></td>
</tr>
<tr>
<td><strong>Spring Semester V</strong></td>
<td>ARC 610 Thesis Studio</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Professional Requirements</td>
<td></td>
</tr>
</tbody>
</table>

Architecture and professional courses completed in a pre-professional bachelor’s degree program will be evaluated to identify courses that may be waived in the Master of Architecture Professional Degree Program.

A maximum of 54 credits, including three design studios, may be waived; generally architecture and professional courses with a grade of B- or higher will be accepted. Requirements for the degree will be contingent on the evaluation of the student’s prior work.
## Master of Urban Design
### Post-professional Degree

### SUMMER (ROME – MIAMI, 2ND SUMMER SESSION)

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 601 Urban Design I: Urban Form and Types / Form-Based Codes</td>
<td>6</td>
</tr>
<tr>
<td>ARC 615 Visualization Techniques</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>7</strong></td>
</tr>
</tbody>
</table>

### FALL

<table>
<thead>
<tr>
<th>Semester 2</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 602 Urban Design II: General Urban to Urban Core</td>
<td>6</td>
</tr>
<tr>
<td>ARC 590 History-Theory I: History of Cities</td>
<td>3</td>
</tr>
<tr>
<td>ARC 621 History-Theory II: Housing / Transportation and Infrastructure</td>
<td>3</td>
</tr>
<tr>
<td>RED 601 Introduction to Real Estate and Planning Law</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>15</strong></td>
</tr>
</tbody>
</table>

### SPRING

<table>
<thead>
<tr>
<th>Semester 2</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 603 Urban Design III: Regional / Informal Urbanism</td>
<td>6</td>
</tr>
<tr>
<td>ARC 541 Elective or Travel Elective</td>
<td>3</td>
</tr>
<tr>
<td>ARC 622 History-Theory III: Urban Design Theory</td>
<td>3</td>
</tr>
<tr>
<td>ARC 623 Public Participation Methods / Charrette with MRED+U Program</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total Credits</strong></td>
<td><strong>14</strong></td>
</tr>
</tbody>
</table>

**Total Credits for Degree** 36

NOTES: The 6-credit Urban Design I Studio takes place at the University of Miami Rome Center. Travel electives can be taken during Intersession or Spring Break.
Master in Real Estate Development and Urbanism

### Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RED 601 Intro to Real Estate Development and Urbanism</td>
<td>3</td>
</tr>
<tr>
<td>RED 610 Financing Urban Real Estate Development</td>
<td>3</td>
</tr>
<tr>
<td>BSL 694 Real Estate Law</td>
<td>2</td>
</tr>
<tr>
<td>RED 630 Market Analysis for Urban Real Estate</td>
<td>3</td>
</tr>
<tr>
<td>ARC 590 History of Cities or approved elective</td>
<td>3</td>
</tr>
</tbody>
</table>

### Winter Session I

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RED 640 National Charrette Institute</td>
<td>1</td>
</tr>
</tbody>
</table>

### Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIN 645 Complex Urban Real Estate Transactions</td>
<td>3</td>
</tr>
<tr>
<td>RED 660 Urban Infill, Preservation and Redevelopment</td>
<td>3</td>
</tr>
<tr>
<td>RED 670 Construction and Project Management</td>
<td>3</td>
</tr>
<tr>
<td>RED 680 Entrepreneurship: Building a Real Estate Dev. Co.</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

### Summer Session I

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RED 690 Integrated Real Estate Dev. Case Studies Practicum</td>
<td>3</td>
</tr>
<tr>
<td>RED 699 Capstone Real Estate Development and Urbanism Charrette</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits for Degree: 36

### Master of Architecture: Research

**Post Professional Degree**

An individual curriculum is developed for each student in consultations with the research program faculty and the director of graduate studies.

Courses in thesis preparation, ARC 529, and Thesis, ARC 710, (6 credits) are required. Master of Architecture degree conferred.
AWARDS AND SCHOLARSHIPS

American Institute of Architects Henry Adams Medal awarded by the American Institute of Architects to the highest ranking graduating student for scholarship and excellence in architecture.

American Institute of Architects Henry Adams Certificate awarded to the second highest ranking graduating student for scholarship and excellence in architecture. Other honors, distinctions, and awards are presented annually for excellent student performance.

Architecture Course Listing
DEPARTMENTS

Art and Art History
Biology
Chemistry
Computer Science
Creative Writing
English
Geography and Regional Studies
Geological Sciences (Master’s degree available from RSMAS)
History
International Administration
International Studies
Latin American Studies
Liberal Studies
Mathematics
Philosophy
Physics
Political Science
Psychology
Sociology

ADMISSION REQUIREMENTS

Please consult the general section of the Graduate Bulletin for the Graduate School admission requirements, and the specific program description for additional, department specific admission requirements.

DEGREE PROGRAMS

Master of Arts
Master of Fine Arts
Master of Public Administration
Master of Science
Doctor of Philosophy

DEGREE REQUIREMENTS

Please consult the specific department section for information related to degree requirements in addition to general degree requirements for the various degrees as listed by the Graduate School.
OTHER

The Max and Peggy Kriloff Fund is a fund that provides travel support for students earning degrees from the College of Arts and Sciences. The fund provides support for students to present papers, or posters at professional conferences worldwide. Students will need to fill out an application form available in Ungar 333 or at the following link; http://www.as.miami.edu/scholarships/travelscholarships and submit it, along with the necessary supporting documentation to the Office of Graduate and Administrative Services in the Ungar Building.
ANTHROPOLOGY - Dept. Code: APY

The Department of Anthropology does not have a graduate program. The courses may be taken for graduate credit with the consent of the major department.

Anthropology Course Listing
ART AND ART HISTORY - Dept. Codes: ART, ARH
www.as.miami.edu/art

DEGREE PROGRAMS

Two programs serve the needs of graduate students in Art and Art History.

Master of Fine Arts program in the studio areas of
- Painting
- Sculpture
- Graphic Design/Multimedia
- Ceramics/Glass
- Printmaking
- Photography/Digital Imaging

Master of Arts program in Art History

MASTER OF ARTS

The M.A. degree is designed for students in art history who plan academic, museum or gallery careers. It entails a minimum of 36 credits in art history and related courses, including six credits of thesis. M.A. students must pass a comprehensive examination. Reading knowledge of a foreign language appropriate to the study of Art History (e.g., French, German, Italian, Spanish) is required.

REQUIREMENTS FOR THE MASTER OF ARTS DEGREE IN ART HISTORY ARE:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art History at 500 level or above</td>
<td>21 credits</td>
</tr>
<tr>
<td>Electives not restricted to courses in Art</td>
<td>9 credits</td>
</tr>
<tr>
<td>Thesis</td>
<td>6 credits</td>
</tr>
</tbody>
</table>

Admission to the Master of Arts program requires a minimum of eighteen semester hours of undergraduate study in Art History.

Applicants for admission are required to submit an example of an art history research paper they have done in addition to the general requirements of transcripts, GRE scores and letters of recommendation. It is highly recommended that applicants have reading knowledge of a foreign language (e.g., French, German, Italian, Spanish).

A maximum of six semester hours of graduate credit may be transferred from another institution, providing that the credits have been taken within six years prior to matriculation at the University of Miami and have been passed with a grade of B or higher.

Applicants for admission to the Master of Arts program are responsible for the submission of the following materials to the Graduate Secretary in Art and Art History:
- All transcripts of college-level academic work;
- GRE scores (and TOEFL score for foreign students);
- A research paper from an undergraduate art history course;
- Three letters of recommendation;
- Application form.

Applicants for the M.A. degree are considered in the Spring and Fall. The deadlines for applying are February 15 for Fall admission and September 15 for Spring admission.
FINANCIAL AID: Graduate Teaching Assistantships and tuition waivers are awarded by the department in studio areas.

The G.R.E. is required for the M.A., but not for the M.F.A. degree.

All M.F.A. students with Teaching Assistantships must contribute to the teaching program as an essential part of their responsibilities.

MASTER OF FINE ARTS

The Master of Fine Arts degree is the terminal degree for students interested in the creation of art who plan to pursue careers as practicing artists/teachers.

The students will take a minimum requirement of 60 credit hours in approved graduate courses.

Teaching assistants can opt to take 10 credits each semester, or will take 9 credits each semester the first year, 12 credits each semester the second year, and 9 credits each semester the third year.

A Supervisory Committee will be assigned when the student is formally admitted to the program.

It will be comprised of at least four members.

The Supervisory Committee chair will be from the student’s area of concentration and a member of the graduate faculty.

The head of the Supervisory Committee will select the membership of the Committee after conferring with the student.

The Supervisory Committee will formally review the student’s progress; the student may be put on probation at the end of any semester, and given one semester to improve or be removed from the program.

Application for candidacy may be made any time after the completion of 30 credits, but must be attained prior to registration for the final semester.

The Supervisory Committee will determine whether the student should be admitted to candidacy.

When the student is admitted to candidacy, a Thesis Committee is formed with at least four members, who need not be the same as the Supervisory Committee.

The Chair should be from the student’s area of concentration and a member of the graduate faculty.

Two others should be department faculty, and the fourth person must be from outside the studio faculty.

This committee will consult with and advise the student on his or her work, meet twice a semester to review progress, read and comment on the thesis document, and conduct a final oral exam during the thesis exhibition.

The thesis exhibition will be scheduled after the successful completion of ART 599; the show will be installed after the candidate has submitted an accepted thesis document. All incompletes must be cleared before the exhibition can be scheduled.
No student gains the right to be recommended for the degree simply by completing requirements. This right is reserved to the student's Thesis Committee in coordination with the Graduate Program Director.

**REQUIREMENTS FOR THE MASTER OF FINE ARTS DEGREE IN STUDIO:**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARH 598, ART 604, ART 681 (3 seminars);</td>
<td>9 credits</td>
</tr>
<tr>
<td>Area of studio concentration;</td>
<td>24 credits</td>
</tr>
<tr>
<td>Art History at 500 or 600 level</td>
<td>6 credits</td>
</tr>
<tr>
<td>Electives, not restricted to courses in Art or Art History;</td>
<td>12 credits</td>
</tr>
<tr>
<td>ART 599 Exhibition Preparation</td>
<td>3 credits</td>
</tr>
<tr>
<td>Thesis, consisting of a body of studio work accompanied by a written document.</td>
<td>6 credits</td>
</tr>
</tbody>
</table>

Applicants for admission to the Master of Fine Arts program are responsible for the submission of the following materials to the Graduate Secretary in Art and Art History:

1. All transcripts of college-level academic work;
2. 20 slides of studio work; OR 20 images on a CD/DVD
3. Three letters of recommendation;
4. Application form.

Applicants for MFA degrees are considered in the Spring and Fall. February 15 is the postmark deadline for Fall admission and September 15 is the postmark deadline for the Spring admission. Teaching Assistantships are available only with Fall admission. The deadline for international applications for the following Fall semester is January 15.

[Art Course Listing](#)

[Art History Course Listing](#)
APPLICATION FOR ADMISSION

Applications are due December 1.
In applying for admission, applicants must select either the Master’s or the Ph.D. track.

Students with an appropriate B.S. degree may seek direct entry to either the M.S. track or the Ph.D. track.

Applicants who were admitted on the Master's track, but wish to change to a Ph.D. track without completing the Master’s may apply for admission to the Ph.D. program before the end of their second semester. Letters of support from three UM Biology faculty, including a major advisor, should be added to the applicant's file. The file must be current. Such applicants will be judged by the same criteria that are applied to other Ph.D. applicants.

Applicants to the Ph.D. track who were admitted on the Master’s track and wish to complete the M.S. degree, should follow the same procedures as all other applicants, but they must include letters of support from three UM Biology faculty. Such applicants will be judged by the same criteria that are applied to other Ph.D. applicants.

Applicants must send the following to the Director of Graduate Studies in Biology:

A. completed application form.

B. all undergraduate and graduate official transcripts (photocopies are not accepted).

C. official scores from recent Graduate Record Examinations (within five years), including the aptitude portion; the Biology subject matter test also is recommended (photocopies of scores are not accepted).

D. international applicants whose native language is not English must additionally submit the TOEFL (Test of English as a Foreign Language) and the TSE (Test of Spoken English) official scores (photocopies of scores are not accepted).

E. letters of recommendation, from three science instructors/ supervisors that address: nature and duration of relationship to applicant; motivation; ability to conceptualize and deal quantitatively with biological problems, and research potential.

F. cover letter that identifies interests, suggests possible research projects and states career goals.

G. copies of any research papers (e.g., publications, manuscripts, senior reports, etc.).

H. written confirmation of a UM Biology faculty sponsor; applicants MUST secure the sponsorship of a faculty member as a condition for admission; the research interests of the applicant and the faculty sponsor should be well-matched; the sponsor will be the major advisor.
I. application fee of $65.
A limited number of applicants to the Ph.D. program may be invited to interview at departmental expense.

*Materials submitted in support of an application cannot be released for other purposes or returned to the applicant.*

**DEGREE REQUIREMENTS**

All students are required to satisfy the general requirements for the appropriate degree that are listed in the Graduate Studies Bulletin, whether or not they are listed among the Biology requirements.

**MASTER OF SCIENCE** - This degree may be attained by either of the two following routes.

**A. M.S. with thesis (a three year program)**

1. **Credits:** a total of 30 credits are required:
   - 24 course credits, including the four semester departmental core courses for graduate students and at least one graduate course in statistics. Students are encouraged to take courses from more than one conceptual area; they are encouraged to select courses and independent studies that will prepare them for research, as listed under the Ph.D. requirements. No more than 9 credits from the independent study series (BIL 671-675) may be used to fulfill the 24 course credits. At times these course numbers are used by professors to teach a new course or a special topics course, in which case the corresponding credits can be counted as a non-independent study credit. Course selection requires committee approval.
   - 6 research credits (BIL 710); no more than 6 M.S. research credits are allowed.
   - The minimum acceptable grade average in all coursework towards the degree is a "B (3.0)" and no grade may be below a "C."

2. **Research Proposal:** public presentation and successful defense to the committee of a written research proposal. The public presentation must be given during regular sessions of the Fall or Spring semesters, not during summer sessions, intersessions, reading days or finals weeks.

3. **Admission to candidacy is made by recommendation of the committee.**

4. **Thesis:** A well-written and successfully defended thesis of publishable quality; a defense is successful if all members of the committee sign the grad school form and the signature page of the dissertation.

5. **Other requirements described under "The Master's Degree," including but not limited to:**
   - a total of at least 30 credits (course credits plus research credits). The Graduate School and the Department concur in requiring at least 24 course credits and exactly 6 research credits (BIL 710) for a thesis M.S.
• once a student has completed all required credits, she/he must enroll in "Research in Residence" (BIL 720) status until the degree is granted. This course carries 0 credits, but is considered full-time enrollment. Even though no credit is earned, a tuition charge equivalent to 1 course credit normally applies to this course.

6. About the committee:

• A single committee will combine the responsibilities of the supervisory and thesis committees.

• The supervisory committee will be determined by the student in consultation with his or her advisor. The committee will consist of a minimum of three faculty, one of whom must be from outside the department, and one of whom must be a member of the graduate faculty. There is no sub-disciplinary representation requirement.

• The thesis committee is formed officially when the student is admitted to candidacy. It may comprise the same individuals as the supervisory committee, or it may be formed anew. The student in consultation with the advisor suggests the membership of the committee to the graduate school. The committee will consist of a minimum of three faculty, one of whom must be from outside the department, and one of whom must be a member of the graduate faculty. There is no sub-disciplinary representation requirement.

• The thesis committee is nominated by the department, but it must be approved and appointed by the Dean of the Graduate School. There is a special form that must be filed with the graduate school.

• Committee meetings are required at least once a year (recommended at least once a semester); the student is responsible for arranging meetings; the student should consult with the committee about major changes in research goals and about problems. Memos summarizing each meeting should be in the student’s file.

7. About the time table:

• A written thesis proposal is due no later than the middle of the second semester. Please take note of this deadline. The scope of the M.S. thesis should be in line with the time table.

• Admission to candidacy normally occurs after completion of one year or 12 credits of graduate work and successful defense of the thesis proposal.

• Analysis of data and a polished draft of the thesis should be completed and in the hands of the committee by the middle of the sixth semester. Please take note of this deadline. The scope of the M.S. thesis should be in line with the time table.

• Defense of the thesis and its submission to the Graduate School must meet or precede the deadline for graduation immediately following the sixth semester unless an extension has been approved by the Graduate Admissions and Advisement Committee (GAAC) upon recommendation of the thesis committee. Notice of the defense must be submitted on a special form to the
graduate school in advance of the defense and must be posted publicly in the department.

- The oral defense of the thesis must be given during regular sessions of the Fall or Spring semesters, not during summer sessions, intersessions, reading days or finals weeks.

- **No student may receive the degree in the same semester in which she/he is admitted to candidacy.**

- The indicated dates form firm deadlines. A student's committee, however, may submit a written petition to GAAC for an extension of time detailing reasons for the request. **An extension will be granted only under extraordinary circumstances and will be effective upon written approval by GAAC.**

- Proposals to change the schedule for any reason should be preceded by a study of the graduate bulletin sections on leaves of absence, full time student status and recency of credit and explicitly address how the proposed change of schedule relates to these matters. The memo requesting the change also should address the proposed financial support.

**B. M. S. without thesis (a two year program)**

1. Credits:

   - A total of 36 course credits are required by the Biology Department, including the four semester departmental core courses for graduate students and at least one graduate course in statistics. Students are encouraged to take courses from more than one conceptual area, listed under the Ph.D. requirements. No more than 9 credits from the independent study series (BIL 671-675) may be used to fulfill the 36 course credits. At times these course numbers are used by professors to teach a new course or a special topics course, in which case the corresponding credits can be counted as a non-independent study credit. Course selection requires committee approval.

   - The minimum acceptable grade average in all coursework towards the degree is a "B (3.0)" and no grade may be below a "C."

2. Admission to candidacy is made by recommendation of the committee.

3. Passing a written comprehensive exam given by the committee.

4. About the committee:

   - A single committee will combine the responsibilities of the initial supervisory and the comprehensive examination committees. The committee will be determined by the student in consultation with her/his advisor. The committee will consist of a minimum of three faculty, one of whom must be from outside the department, and one of whom must be a member of the graduate faculty. There is no sub-disciplinary representation requirement.

   - The examination committee is formed officially when the student is admitted to candidacy. It may comprise the same individuals as the supervisory committee,
or it may be formed anew. The student in consultation with the advisor suggests the membership of the committee to the graduate school. The committee will consist of a minimum of three faculty including the student’s advisor, one of whom must be from outside the department, and one of whom must be a member of the graduate faculty. There is no sub-disciplinary representation requirement.

- The examination committee is nominated by the department, but it must be approved and appointed by the Dean of the Graduate School. There is a special form that must be filed with the graduate school.

- Committee meetings are required at least once a year (recommended at least once a semester); the student is responsible for arranging meetings; the student should keep the committee advised of major changes in the graduate program plan; memos summarizing each meeting should be in the student’s file.

5. Other requirements described under "The Master's Degree."

Note that although the Graduate School requires only 30 credits for an M.S. degree, the Department requires 36 course credits for a non-thesis M.S.

6. About the time table:

- **Admission to candidacy** normally occurs after completion of one year or 12 credits of graduate work.

- The **comprehensive exam** must be passed by the **end of the fourth semester**.

- **No student may receive the degree in the same semester in which she/he is admitted to candidacy.**

- The indicated dates form **firm deadlines**. A student’s committee, however, may submit a written petition to GAAC for an extension of time detailing reasons for the request. **An extension will be granted only under extraordinary circumstances and will be effective upon written approval by GAAC.**

- Proposals to change the schedule for any reason should be preceded by a study of the **graduate bulletin** sections on **leaves of absence, full time student status** and **recency of credit** and explicitly address how the proposed change of schedule relates to these matters. The memo requesting the change also should address the **proposed financial support**.

### C. DOCTOR OF PHILOSOPHY

1. Credits: a total of 60 credits (including both course and research credits) beyond the Bachelor’s degree are required:

   - At least 18 course credits that are not from the independent study series, including the four semester departmental core courses for graduate students and at least one graduate course in statistics. The independent study series is BIL 671-675. At times these course numbers are used by professors to teach a new course or a special topics course, however, in which case the corresponding credits can be counted as a non-independent study credit. Course selection requires committee approval.
• At least 12 research credits (BIL 730 and/or BIL 740). Once the overall number of required credits (see below) has been reached, there is no need to take additional research credits.

• An additional 30 credits from any combination of graduate courses (500 and 600 level regular courses and independent study courses) and research credits (700 level) to bring the total number of credits beyond the Bachelor's Degree to 60 credits. (One example: 18 required course credits + 12 required research credits + 15 additional course credits + 15 additional research credits = 60 total; another example would be 18 additional course credits and only 12 additional dissertation credits, etc.)

• Students who already have a Master's Degree in the same field may not need as many course credits (consult Graduate School rules on transfer credits), but at least 24 credits must be taken in residence at UM.

• The committee may decide that students with previous graduate level courses may be exempt from some of the course requirements.

• The minimum acceptable grade average in all coursework towards the degree is a "B (3.0)" and no grade may be below a "C."

• **CONCEPTUAL AREAS:** Students are encouraged to take courses and independent studies from at least 3 main conceptual areas, and are urged to take courses and independent studies that will prepare them for research and for the comprehensive qualifying exam. Students also are encouraged to participate in seminars and study groups and to take special courses in other departments of UM, at our Coalition for Excellence in Tropical Biology partner institutions, from the Organization for Tropical Studies, or other special interdisciplinary courses. Such courses should be appropriate to their course of study and research area as determined by their committee. Conceptual areas offered in our department include: EVOLUTION (graduate level evolution courses are in the series 520's and 620's, also 519 is included); ECOLOGY (graduate level ecology courses are in the series 530's and 630's); BEHAVIOR (graduate level behavior courses are in the series 540's and 640's); GENETICS AND MOLECULAR BIOLOGY (graduate level genetics courses include BMB 509, and BIL 530 in addition to the series 550's and 650's); and PHYSIOLOGY AND CELL BIOLOGY (graduate level physiology courses are in the series 560's and 660's). Special concentrations in our department and/or in collaboration with other departments include: Tropical Biology, Mathematical Ecology, Neuroscience, and Behavior.

2. Comprehensive qualifying exam should be passed by the end of the third semester.

• A single committee (see number 9 below about committee membership) will advise the student on both comprehensive and research training. To fulfill the **comprehensive function**, the committee will be responsible for ensuring breadth, significant background and depth in at least 3 conceptual areas (examples include but are not limited to the areas listed above).

• To establish intellectual communication between the committee members and students early on, the committee will begin to work with the student in the first semester. Faculty will suggest reading lists, courses and/or independent study, as needed, to prepare the student with sufficient background for the comprehensive examination which will include 3 areas, one of which is the research area. The
committee and student will interactively define the scope of comprehensive training and thus of the comprehensive examination in these 3 areas.

- The comprehensive examination will be held in the third semester. The committee will designate a chair to administer the examination. The written part of the exam will not be open book and it will be administered on campus for a discrete period of time (up to 4 hours within each of two consecutive days) by the examination chair. All members of the committee will grade all the questions. With committee approval, an alternative is to present to the committee a first-authored, publishable, full-length article manuscript concerning research conducted since matriculation at UM. Before the end of the third semester, the manuscript must be submitted to a journal approved by the committee. After the committee has read the written answers or manuscript, about one week later there will be an oral exam for the purpose of further exploring the student’s grasp of the subject matter.

- Each committee member will decide on a pass/fail grade based on the total performance (written plus oral). For the student to pass the examination, 3 of the 4 examiners must vote a grade of pass. An oral and written summary of the committee’s evaluation must be prepared by the chair of the examination committee and given to the student and to GAAC. If the student does not pass the examination, there will be a chance to retake it the following semester. In the case of failure a second time, he/she will be terminated from the program.

3. Research proposal: public presentation of a research proposal and defense of a written research proposal to the complete research committee (see below) should be completed by the middle of the fourth semester. Students are encouraged to follow the format of a grant proposal to a major funding agency. At the proposal defense, the student will receive either a pass or a fail. A grade of pass will be recorded if no more than one member of the complete research committee (see below) votes to fail the student. If the student fails the proposal defense, she/he will be given a second chance to defend no later than the sixth week of the fifth semester. If the defense is failed a second time, the student will be terminated from the program.

4. Admission to candidacy: (application is made on a form available in the grad school and in the department). This normally will occur at the end of the fourth semester. Requirements are to pass the comprehensive examination and to successfully defend a written research proposal.

5. Teaching: All students on the Ph.D. track in Biology are required to serve satisfactorily at least one semester as a teaching assistant in one of the courses offered as part of the Department's training program.

6. Grants: Submission of a grant proposal to a major funding agency (e.g., NSF, NIH, National Geographic, World Wildlife Fund, etc.). All students are required to seek outside funding for their research. This must be a research project proposal. Application for an NSF pre-doctoral fellowship does not meet this requirement, but application for an NSF dissertation improvement grant does qualify.

7. Ph.D. Dissertation: A well-written and successfully defended dissertation containing an original contribution to the field and of quality appropriate for publication in a scientific journal; a defense is successful if all members of the committee sign the grad school form and the signature page of the dissertation. A public dissertation seminar also is presented at the time of the defense.
8. Other requirements described under "Doctor of Philosophy," including but not limited to:

- a total of at least 60 credits (course credits plus research credits).

- once a student has completed all required credits, she/he must enroll in "Research in Residence" (BIL 750) status until the degree is granted. This course carries 0 credits, but is considered full-time enrollment. Even though no credit is earned, a tuition charge equivalent to 1 course credit normally applies to this course.

9. A single committee will advise the student on both comprehensive and research training. The committee will be responsible for ensuring breadth, significant background and depth in at least 3 conceptual areas (examples include but are not limited to the areas listed above). The research function of the committee is to advise the student on research, including preparation, training, project choice, project design, implementation and evaluation of the research. The committee will go through several phases and its membership will be determined by the advisor and student together, contingent upon approval of GAAC and/or the Graduate School, as appropriate at each phase:

- The **initial committee** will consist of at least 4 faculty, 2 appointed to ensure breadth of training (from two areas outside the research area) and 2 from the research area. It will be formed to help the student choose courses during the first few weeks of the first semester. This committee will decide whether students having a M.S. in biology (botany, zoology, etc.) from another institution can substitute a graduate level course taken elsewhere for a departmental course requirement; it also will decide which additional courses should be taken for both research and breadth. The choice of areas briefly will be outlined in a memo to GAAC.

- The **initial committee of at least 4 faculty** will be responsible for preparing and administering the comprehensive examination.

- The **complete committee of at least 4 faculty** including one from outside the department, should be formed by the end of the third semester; all four members should participate in the proposal evaluation which will take place in the fourth semester. The committee will consist of a minimum of four faculty, which includes the committee chair, who must be a member of the Graduate Faculty. Of the remaining members, it is also required that two shall be from the Graduate Faculty.

- The **dissertation committee (of four)** is formed officially when the student is admitted to candidacy. It usually will comprise the same individuals as the complete research committee, or it may be formed anew. The student and advisor consult on the membership of the committee, and the department nominates the committee to the graduate school. The committee will consist of a minimum of four faculty, which includes the committee chair who is the advisor, who must be a member of the Graduate Faculty. Of the remaining members, it also is required that two shall be from the Graduate Faculty and one from outside the department of concentration. The dissertation committee is nominated by the department, but it must be approved and appointed by the Dean of the Graduate School. There is a special form that must be filed with the graduate school.

- Committee meetings are **required at least once a year** (recommended at least once a semester in the early phases). The student is responsible for arranging meetings; the student should consult with the committee about any major changes in research goals and any problems; memos summarizing each meeting should be in
the student’s file.

10. About the time table:

- The written **comprehensive qualifying examination** must be passed by the end of the third semester.

- A **polished, written dissertation proposal** must be **defended to the committee in the fourth semester** together with a **public presentation of the proposal**. This must take place by mid-April of the spring semester or mid-November of the fall semester.

- **Admission to candidacy** normally occurs after the comprehensive qualifying exam and proposal defense are passed upon the recommendation of the committee and the approval of the Graduate School. Application for admission to candidacy is made to the graduate school on a special form.

- Analysis of data and a **polished draft of the dissertation** should be completed and in the hands of the dissertation committee **no later than the middle of the tenth semester**.

- **Defense of the dissertation and its submission to the Graduate School** must meet or precede the deadline for graduation immediately following **the tenth semester** unless an extension has been approved by GAAC upon recommendation of the dissertation committee. Notice of the defense and of the public seminar must be submitted on a special form to the graduate school in advance of the defense and must be posted publicly in the department.

- The oral **defense of the dissertation** must be given during **regular sessions** of the Fall or Spring semesters, not during summer sessions, intersessions, reading days, or finals weeks.

- **No student may receive the degree in the same semester in which she/he is admitted to candidacy**.

- The indicated dates form **firm deadlines**. A student's committee, however, may submit a written petition to GAAC for an extension of time detailing reasons for the request. **An extension will be granted only under extraordinary circumstances and will be effective upon written approval by GAAC**.

- Proposals to change the schedule for any reason should be preceded by a study of the **graduate bulletin** sections on **leaves of absence, full time student status** and **recency of credit**, and explicitly should address how the proposed change of schedule relates to these matters. The memo requesting the change also should address the **proposed financial support** of the student beyond the 10 semesters of normal departmental support.

11. Public presentations must be during regular semesters. The public presentation associated with the defense of the proposal and the public seminar associated with the defense of the dissertation must be given during regular sessions of Fall or Spring semesters, not during summer sessions, inter-sessions, reading days, or finals weeks.
**IMPLEMENTATION**

All Graduate students will be reviewed each fall semester by GAAC.

A. The advisor will review the student's progress to date.

B. The student will provide updates for a student progress database every October.

C. The student will provide written evidence that the advisor and committee have reviewed her/his progress and plans.

D. Each student will receive a letter summarizing the results of the discussion concerning his/her progress.

E. All graduate students shall have the right to respond to GAAC, and, if necessary, the graduate faculty in matters pertaining to the review.

F. Possible outcomes of the review:
   1. Student making satisfactory progress
   2. Student not making satisfactory progress; recommendations for improvement
   3. Student not making satisfactory progress; his/her tenure terminated.

**FINANCIAL SUPPORT**

A. The Department intends to support all doctoral students in good standing for up to 10 semesters. Support beyond 10 semesters is contingent upon GAAC approval.

B. Students who do not provide annual updates for the student progress database will not be eligible for continued funding. Students who will be off-campus are still responsible for making sure that GAAC receives the data.

C. Students holding full University fellowships, Maytag fellowships or research assistantships will not normally be given teaching assignments, nor will students be permitted to hold Maytag fellowships and research assistantships simultaneously. Exceptions require GAAC approval.

*Biology Course Listing*
PROSPECTIVE graduate students are expected to have completed, during their undergraduate training:

The candidate must hold a B.S./B.A. degree from an accredited institution. Consideration is given to applicants who have successfully completed general chemistry (two semesters), organic chemistry (two semesters), physical chemistry (two semesters), and the related laboratories. A course in advanced inorganic chemistry is strongly recommended, and remedial work in this area may be required of students who have not taken such a course. The mathematics and physics courses that are normally included in a B.S. program in chemistry are also required.

Undergraduate deficiencies are treated as such and must be overcome during the first year of graduate study.

M.S. Degree

The MS degree requires a minimum of 30 credits. At least 18 credits must be formal lecture courses. The remaining 12 credits must be broken down as follows:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry Seminar (CHM 679)</td>
<td>2</td>
</tr>
<tr>
<td>Chemistry Seminar (CHM 680)</td>
<td>1</td>
</tr>
<tr>
<td>Introduction to Research (CHM 685)</td>
<td>2</td>
</tr>
<tr>
<td>Master's Thesis (CHM 710)</td>
<td>7</td>
</tr>
</tbody>
</table>

Students must take a minimum of 9 credits of formal lecture courses in the fall semester of their first year and a minimum 9 credits of formal lecture courses in the spring semester of their first year. Of the 18 credits, 3 core courses totaling 9 credits should be taken by all graduate students.

- The required number of credits in chemistry seminars (CHM 679 and 680) and Introduction to Research (CHM 685) must be taken in the first and second year.

- The required number of credits in research (CHM 710) must be taken in the second year.

- A dissertation based on research of a quality acceptable for publication in a recognized scientific journal must be completed before the end of the second year.

The remaining courses may be selected from 600-level chemistry courses or 500- or 600-level courses in other departments.

The M.S. degree may be earned with or without a thesis. In order to complete a MS degree without thesis, an advanced comprehensive exam must be passed.

The exam is administered at the end of the second year in the program.
Ph. D. Degree

The general requirements for the doctorate in Chemistry are set forth in this Bulletin under the heading Doctor of Philosophy. The Department of Chemistry has the following specific requirements:

The PhD degree requires a minimum of 60 credits. The department will cover tuition costs up to 60 credits for students on assistantships and fellowships. At least 18 credits must be formal lecture courses. The remaining 42 credits could be broken down as follows:

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry Seminar (CHM 679)</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry Seminar (CHM 680)</td>
<td>2</td>
</tr>
<tr>
<td>Introduction to Research (CHM 685)</td>
<td>2</td>
</tr>
<tr>
<td>Problems in Research Planning (CHM 688)</td>
<td>2</td>
</tr>
<tr>
<td>Pre-candidacy Doctoral Dissertation (CHM 730)</td>
<td>28</td>
</tr>
<tr>
<td>Post-candidacy Doctoral Dissertation (CHM 740)</td>
<td>4</td>
</tr>
</tbody>
</table>

Students must take a minimum of 9 credits of formal lecture courses in the fall semester of their first year and a minimum 9 credits of formal lecture courses in the spring semester of their first year. Of the 18 credits, 3 core courses totaling 9 credits should be taken by all graduate students.

- The required number of credits in the chemistry seminar (CHM 679) must be taken in the first and second year.
- The required number of credits in Introduction to Research (CHM 685) must be taken in the first year.
- The required number of credits in the chemistry seminar (CHM 680) must be taken in the second and fourth year.
- The required number of credits in Pre-candidacy Doctoral Dissertation (CHM 730) must be taken in the first, second, third and fourth year.
- The required number of credits in Post-candidacy Doctoral Dissertation (CHM 740) must be taken in the fourth year.
- Four Cumulative Examinations must be passed before the end of the first year.
- An Oral Comprehensive Exam must be passed before the end of the second year.
- An original research proposal in Problems in Research Planning (CHM 688) must be presented and defended before the end of the third year.
- A dissertation based on research of a quality acceptable for publication in a recognized scientific journal must be completed before the end of the fifth year.
The department of Computer Science offers a Master of Science in Computer Science and a Doctor of Philosophy in Computer Science.

Master of Science in Computer Science

The Master of Science program in Computer Science is overseen by the Computer Science Graduate Committee (CSGC). The basic guidelines for approval of a student’s program are recommendations appearing in the Communications of the Association for Computing Machinery (ACM), the professional society in Computer Science.

Prerequisites for Admission
Completion of the following courses, or their equivalents, is prerequisite to entry into the program: CSC 120, CSC 220, CSC 314, CSC 517, CSC 527, MTH 111, MTH 224, and MTH 309. Students may be admitted with deficiencies; these must be completed in addition to the degree requirements.

Requirements for Graduation
Students must complete the Graduate School requirements, and the Departmental requirements described here.

Students must complete either the thesis option or the coursework option.

1. Thesis option:
   • CSC 710 – Master’s Thesis (6 credits)
   and coursework:
   • At least 9 credits from CSC6XX courses and at least 15 credits from other approved courses.

2. Coursework option:
   At least 36 credits from approved courses.

At least 18 credits, excluding thesis credits, must be from courses offered by the Department of Computer Science, and may not include more than 6 credits from CSC 670. CSC 5XX and CSC 6XX courses can be approved for a program, and certain non-Computer Science graduate courses may be considered for approval.

Each program must include both theoretical and experimental topics. By graduation students will have knowledge in the areas of Programming Languages, Algorithm Design and Analysis, Theory of Computing, Operating Systems, Computer Networks, and Software Engineering. Each program is approved by the CSGC and the Department Chairman or designate. Programs may be individually tailored to meet varied backgrounds and objectives. It is recognized that there are individuals with undergraduate degrees in other fields wishing to pursue graduate work in Computer Science, and individuals with work experience in the field wishing to advance their formal training in Computer Science.
5-year Bachelor of Science + Master of Science in Computer Science

The 5-year Bachelor of Science + Master of Science program in Computer Science provides research training for students who wish to work in a computing research lab, or possibly continue to PhD studies.

Students must complete the requirements for a Bachelor of Science in Computer Science, and the requirements for a 30 credit Master of Science in Computer Science with thesis. No credits may be counted towards both requirements.

Students enter the "MS-phase" of the program when they have met the following requirements:

- They have achieved senior status, i.e., earned 89 credits towards their Bachelor of Science in Computer Science.
- Within the requirements for a Bachelor of Science in Computer Science, they have completed the prerequisites for entry into the regular Master of Science program, i.e., CSC120, CSC220, CSC314, CSC517, CSC527, MTH161, MTH224, and MTH309.
- They have completed 3 credits of CSC410/1 in a research-oriented project.
- They have a GPA of at least 3.0 in the CSC courses taken towards their BS in Computer Science.
- They have advised the Director of Graduate Studies of their eligibility for the MS-phase.

Students in the MS-phase must complete 3 further credits of CSC410/1 in a research-oriented project, as part of their Bachelor of Science in Computer Science (this project will normally be the starting point for the Master of Science research). Students in the MS-phase may take 600 level courses that count towards completing the requirements for the Master of Science in Computer Science. When students have completed the requirements for a Bachelor of Science in Computer Science they will be awarded that degree, and when they have completed the requirements for the Master of Science in Computer Science they will be awarded that degree. Students in the MS-phase must submit their GRE scores before they are admitted to graduate student status.

Incoming students can be admitted to the program if their mathematics placement is MTH108 or higher. Existing Bachelor of Science in Computer Science students can switch into the program when they have met the requirements for entering the MS-phase of the program. Students can be removed from the program if they have not met the prerequisites for admission to the MS-phase by the time they have achieved senior status. If a student is removed or decides to withdraw from the program, any 600 level courses taken may be used to fulfill the requirements for a Bachelor of Science in Computer Science.

DOCTOR OF PHILOSOPHY IN COMPUTER SCIENCE

The Doctor of Philosophy program in Computer Science is overseen by the Computer Science Graduate Committee (CSGC). The basic guidelines for approval of a student’s program are recommendations appearing in the Communications of the Association for Computing Machinery (ACM), the professional society in Computer Science.
Prerequisites for Admission
Completion of the following courses, or their equivalents, is prerequisite to entry into the program: CSC 120, CSC 220, CSC 314, CSC 517, CSC 527, MTH 111, MTH 224, and MTH 309. Students may be admitted with deficiencies; these must be completed in addition to the degree requirements.

Requirements for Graduation
Students must complete the Graduate School requirements, and the Departmental requirements described here.

Written Qualifying Exam:
The student must pass a three-hour written exam of general knowledge of Computer Science at the end of the first year. Upon failure, the student may petition the CSGC to allow a second attempt at the end of the second year. The exam will be administered once a year in the early weeks of the summer session. It will cover expected knowledge of all first-year graduate students. Included in this material are a fundamental understanding of algorithm analysis and design, advanced skills in programming, basic knowledge of computer architecture, and a general understanding of computer systems.

Classroom Courses:
In the first two years, the student must take eight CSGC-approved classroom courses, for a total of 24 credits. At least four of these courses (12 credits) must be CSC 6XX courses. The eight courses must include two courses from each of the areas of Analysis, Applications, and Systems. The student must work with the Director of Graduate Studies to select a cohesive set of courses as approved by the CSGC. The CSGC will have sole authority in designating the areas to which each course belongs. In the case that a course is designated in more than one area, a student may apply the course to only one area. The designation of current CSGC-approved courses appears at the end of this description.

Selecting an Advisor:
By the end of the second semester, the student must find a research supervisor. By the end of the third semester, the student must have made significant progress on a research project under the supervision of a faculty member. The student must write a detailed progress report that will become a public document and shall be kept on file by the Department. The student must present the report to a quorum of the CSGC at a time to be approved by the chairman of the Department. The supervisor and CSGC must approve the project as applicable toward candidacy for a Ph.D.

Annual Presentations:
After passing the written comprehensive exam, the student must make a public oral presentation to the Department at least once per year. These presentations include the thesis proposal and the thesis defense. The goals are to develop the student’s oral and presentation skills, to provide a means for the Department to check the research and progress of the student, and to present the opportunity for feedback to improve the student’s research.

Teaching Experience:
Each student must teach a lab-based course for a minimum of one semester. Lab-based courses typically require the student to present material in a relaxed lecture format, re-emphasizing material learned in the general lecture as well as introducing new material to the students.
### Approved Courses for Doctor of Philosophy

#### Analysis

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>CSC 506</td>
<td>Logic</td>
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<tr>
<td>CSC 518</td>
<td>Compiler Theory</td>
</tr>
<tr>
<td>CSC 527</td>
<td>Theory of Computing</td>
</tr>
<tr>
<td>CSC 540</td>
<td>Algorithm Design and Analysis</td>
</tr>
<tr>
<td>CSC 545</td>
<td>Introduction to Artificial Intelligence</td>
</tr>
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<td>CSC 606</td>
<td>Logic Programming</td>
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<tr>
<td>CSC 609</td>
<td>Cryptography and Data Security</td>
</tr>
<tr>
<td>CSC 611</td>
<td>Theory of Computation</td>
</tr>
<tr>
<td>CSC 640</td>
<td>Algorithm Design and Analysis</td>
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<tr>
<td>CSC 612</td>
<td>Theory of Complexity</td>
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<tr>
<td>CSC 623</td>
<td>Theory of Relational Databases</td>
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<tr>
<td>CSC 628</td>
<td>Parallel Algorithms</td>
</tr>
<tr>
<td>CSC 646</td>
<td>Neural Computing</td>
</tr>
<tr>
<td>CSC 647</td>
<td>Computational Geometry</td>
</tr>
<tr>
<td>EEN 634</td>
<td>Modeling and Analysis of Computer Networks</td>
</tr>
<tr>
<td>EEN 656</td>
<td>Information Theory</td>
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#### Applications

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<td>CSC 523</td>
<td>Database Systems</td>
</tr>
<tr>
<td>CSC 529</td>
<td>Introduction to Computer Graphics</td>
</tr>
<tr>
<td>CSC 545</td>
<td>Introduction to Artificial Intelligence</td>
</tr>
<tr>
<td>CSC 555</td>
<td>Multimedia Systems</td>
</tr>
<tr>
<td>CSC 548</td>
<td>Bioinformatics Algorithms</td>
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<td>CSC 628</td>
<td>Parallel Algorithms</td>
</tr>
<tr>
<td>CSC 645</td>
<td>Expert System Design</td>
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<tbody>
<tr>
<td>CSC 648</td>
<td>Automated Reasoning</td>
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<td>CSC 655</td>
<td>Advanced Multimedia Systems</td>
</tr>
<tr>
<td>EEN 577</td>
<td>Data Mining</td>
</tr>
<tr>
<td>EEN 638</td>
<td>Computer Vision</td>
</tr>
<tr>
<td>EEN 653</td>
<td>Pattern Recognition and Neural Networks</td>
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<tr>
<td>MTH 520</td>
<td>Numerical Analysis I</td>
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<td>MTH 521</td>
<td>Numerical Analysis II</td>
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<tr>
<td>MTH 528</td>
<td>Combinatorics</td>
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#### Systems

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<tbody>
<tr>
<td>CSC 518</td>
<td>Compiler Theory</td>
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<tr>
<td>CSC 523</td>
<td>Database Systems</td>
</tr>
<tr>
<td>CSC 524</td>
<td>Networks and Information Security</td>
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<td>CSC 555</td>
<td>Multimedia Systems</td>
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<td>CSC 609</td>
<td>Cryptography and Data Security</td>
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<td>CSC 645</td>
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<tr>
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<td>Advanced Multimedia Systems</td>
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<td>EEN 514</td>
<td>Computer Architecture</td>
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<td>EEN 534</td>
<td>Computer Communication Networks</td>
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<td>EEN 614</td>
<td>Advanced Computer Architecture</td>
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<tr>
<td>EEN 634</td>
<td>Modeling and Analysis of Computer Networks</td>
</tr>
<tr>
<td>EEN 671</td>
<td>Advanced Interactive Multimedia Information Systems</td>
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## Approved Graduate Courses

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<tbody>
<tr>
<td>CSC 506</td>
<td>Logic</td>
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<tr>
<td>CSC 517</td>
<td>Data Structures and Algorithm Analysis</td>
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<tr>
<td>CSC 518</td>
<td>Interpreters and Compiler Theory</td>
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<tr>
<td>CSC 519</td>
<td>Programming Languages</td>
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<tr>
<td>CSC 521</td>
<td>Principles of Computer Operating Systems</td>
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<td>CSC 523</td>
<td>Database Systems</td>
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<td>CSC 524</td>
<td>Computer Networks</td>
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<td>Theory of Computing</td>
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<td>CSC 529</td>
<td>Introduction to Computer Graphics</td>
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<td>CSC 531</td>
<td>Introduction to Software Engineering</td>
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<td>CSC 540</td>
<td>Algorithm Design and Analysis</td>
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<td>CSC 544</td>
<td>Computer Modeling</td>
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<td>CSC 545</td>
<td>Introduction to Artificial Intelligence</td>
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<tr>
<td>CSC 548</td>
<td>Bioinformatics Algorithms</td>
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<td>CSC 555</td>
<td>Multimedia Systems</td>
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<tr>
<td>CSC 595-599</td>
<td>Topics in Computer Science</td>
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<tr>
<td>CSC 606</td>
<td>Logic Programming</td>
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<td>CSC 609</td>
<td>Data Security and Cryptography</td>
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<td>CSC 611</td>
<td>Theory of Computation</td>
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<td>CSC 612</td>
<td>Complexity Theory</td>
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<td>CSC 613</td>
<td>Computer System Performance Evaluation</td>
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<td>CIS 620</td>
<td>Information Systems Analysis and Design</td>
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<td>Theory of Relational Databases</td>
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<td>Neural Computing</td>
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<tr>
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<td>Seminar for Beginning Graduate Students</td>
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<td>Seminar</td>
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<td>Computational Geometry</td>
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<td>CSC 670</td>
<td>Directed Reading</td>
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<td>CSC 685-689</td>
<td>Topics in Computer Science</td>
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<tr>
<td>CSC 710</td>
<td>Master’s Thesis</td>
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<td>CSC 725</td>
<td>Continuous Registration – Master’s Study</td>
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<td>CSC 730</td>
<td>Doctoral Dissertation</td>
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<td>CSC 740</td>
<td>Doctoral Dissertation Post Candidacy</td>
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<td>CSC 750</td>
<td>Research in Residence</td>
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<td>EEN 512</td>
<td>Object-Oriented Software Engineering</td>
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<td>EEN 514</td>
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<td>EEN 532</td>
<td>VLSI Systems</td>
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<td>Computer Communication Networks</td>
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<td>EEN 538</td>
<td>Introduction to Digital Image Processing</td>
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<tr>
<td>EEN 548</td>
<td>Machine Learning</td>
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<td>EEN 572</td>
<td>Object-Oriented and Distributed Database Management Systems</td>
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<td>Computer Vision</td>
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<td>EEN 656</td>
<td>Information Theory</td>
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<td>MTH 621</td>
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<td>Stochastic Processes</td>
</tr>
</tbody>
</table>

[Computer Science Course Listing](#)
CREATIVE WRITING
www.as.miami.edu/english

DEGREE PROGRAMS

The Department of English offers a two-year program in fiction or poetry writing leading to the Master of Fine Arts degree. The program provides an opportunity for students of superior ability in imaginative writing to develop their skills and critical judgment through the practice of writing and the study of literature.

The creative writing program is a member of the Associated Writing Programs.

For further information, please consult the description of the M.F.A. in English.
ENGLISH - Dept. Code: ENG
www.as.miami.edu/english

DEGREE PROGRAMS

The Ph.D. program is an innovative scholarly course of study offering substantial work in all areas of English, American, and Transnational literature, including Anglo-Irish literature, with some opportunities for advanced work in comparative literature.

Doctor of Philosophy

1. Courses
Ph.D. students must complete 54 credits (if entering with a B.A.) or 36 credits (if entering with an M.A.) of 600-level courses in literature and literary theory.

2. Language Requirements
A reading knowledge of two foreign languages is required.

3. Qualifying Examination
All Ph.D. students are required to pass a qualifying examination. Students may not take the qualifying examination until they have

- completed the required Ph.D. coursework,
- satisfied the foreign language requirement
- enrolled for English 697 (Readings for the Qualifying Examination).

4. Dissertation
Students may proceed with the dissertation after the dissertation committee has been appointed and the dissertation proposal has been accepted by the committee and approved by the department.

The dissertation itself must be an investigation of a substantial critical or scholarly topic. A final oral defense of the dissertation is required.

Further information on the department’s graduate programs is contained in the Guide to Graduate Study available from the Department of English.

Students must complete their work within one year of the schedule set out in the Guide to Graduate Study.

English Course Listing
DEGREE PROGRAMS

The Department of Geography offers a graduate M.A. program. For more information, please contact Dr. Ira Sheskin at isheskin@miami.edu or visit the Geography Department’s web page at www.as.miami.edu/geography.

The following graduate level courses may be taken for graduate credit with the consent of the major department.

GEG 501, GEG 503, GEG 510, GEG 511, GEG 515, GEG 520, GEG 521, GEG 522, GEG 523, GEG 525, GEG 530, GEG 535, GEG 545, GEG 552, GEG 570, GEG 580, GEG 582, GEG 591, GEG 595, GEG 603, GEG 620, GEG 625, GEG 637, GEG 645, GEG 651, GEG 661, GEG 672, GEG 681, GEG 710, GEG 720, GEG 725

Geography and Regional Studies Course Listing
GEOLOGICAL SCIENCES - Dept. Code: GSC
www.as.miami.edu/geology

DEGREE PROGRAMS

A 5-year B.S./M.S. degree allows qualified entering freshmen to complete a B.S. in Geological Science and a M.S. in Marine Geology and Geophysics within 5 years.

The B.S. degree in Geological Sciences is offered through the Department of Geological Sciences in the College of Arts and Sciences.

The Master of Science (M.S.) degree in Marine Geology and Geophysics is offered through the Division of Marine Geology and Geophysics in the Rosenstiel School of Marine and Atmospheric Science (RSMAS).

Undergraduate requirements are listed under the B.S. degree above.

By the spring of their Junior year students should have obtained a graduate faculty advisor, selected an approved topic for research, and begun work on their senior thesis as preparation for the M.S. In the senior year, students will increase their focus on graduate courses and work closely with their graduate faculty advisor.

Contact Dr. Harold Wanless at the departmental office (305-284-4253) for more information.

Geological Course Listing
DEGREE PROGRAMS

I. REQUIREMENTS FOR THE M.A. DEGREE IN HISTORY

A. Admissions

We are looking for applicants with a record of outstanding achievement and evidence of potential success in graduate studies, attributes which can be measured in various ways such as grades, recommendations, written work, and test scores. Students with a master’s degree from an accredited institution may apply for admission to the doctoral program. Students with a bachelor’s degree only and with very strong credentials may be admitted into the doctoral program. Applicants must meet the admissions requirements set by both the graduate school, which are listed in its materials, and the department of history.

Because one of the strengths of our program is a close working relationship between faculty members and students, we cannot always accept qualified applicants when no one in the department can provide the guidance they need in their area of interest. Applicants should explore the listing of faculty on our website and contact the DGS or relevant faculty members if they have any questions.

The complete application contains:

1) A completed application form.
2) A completed financial aid application, if seeking aid.
3) Three letters of recommendation, preferably from applicant’s former professors.
4) Recent Graduate Record Examination scores on the General Test.
5) TOEFL scores (for international students).
6) Official transcripts.
7) A detailed statement from the student indicating:
   (a) the student’s background and education;
   (b) the student’s interests (field, topic, etc.);
   (c) why the student wants to pursue a graduate degree in history at the University of Miami;
   (d) what the student plans to do with the degree upon completion. This statement constitutes a very important part of the application review process and should indicate the student’s understanding of the professional nature of the training that the student is about to begin.
8) A representative writing sample.

Deadlines
January 5: Applications for admission and aid for Fall semester.
B. Committee

Upon admission to the master’s program in history, the student is assigned a provisional major advisor. An advisory committee of three, including the major advisor and a faculty member representing the student’s secondary field, must be formed no later than the student’s second semester in the program. There are then two options for completing the masters. One requires 27 hours of coursework and an exam. The other requires 21 hours of coursework, a master’s thesis (6 thesis credits), and an exam. In the case of both options, one member of the committee may be from a cognate discipline, but this is not required. It is the responsibility of the student and the advisor to form the committee and to notify the DGS of its composition. The major advisor chairs the advisory committee and oversees the student’s course of study and progress in the program. The advisory committee also administers the oral comprehensive exam that is given in the case of either option. In the case of the second (thesis) option, the advisory committee and the thesis committee are usually, but not necessarily, composed of the same faculty members.

C. Requirements

27 credits at the 500 level or above, of which at least 18 must be at the 600 level or above.

Passage of an oral exam in two fields.

Completion of History 695 (Historiography). This course is normally given in the fall semester. All students are required to take the Historiography course in their first year.

Students may, if they wish, write an M.A. thesis. Students who elect this option should consult with their advisor. Any student writing a thesis should register for 6 credits of History 710, which count toward the 27 required credits.

Language Requirements: Students must demonstrate a reading knowledge in at least one foreign language. Reading knowledge in additional languages may be required by the major advisor.

See under Ph.D. requirements for more information on fulfilling language requirements.

The student must apply for graduation in his or her penultimate semester (i.e. fall semester for spring semester).

The comprehensive examination for the M.A. degree in history is an oral examination in two fields that will normally not exceed two hours. Though the exam is in two fields, all members of the advisory committee will participate. Students selecting the thesis examination should expect questioning on the thesis as well as their fields during the examination. For such students the comprehensive will also act as a thesis defense.

D. Fields

See H under Requirements for the Ph.D.
II. REQUIREMENTS FOR THE PH.D. DEGREE IN HISTORY

A. Admissions

We are looking for applicants with a record of outstanding academic achievement and evidence of potential success in graduate studies, attributes which can be measured in various ways such as grades, recommendations, written work, and test scores. Students with a master’s from an accredited institution may apply for admission to the doctoral program. Students with a bachelor’s degree only and with very strong credentials may be admitted into the doctoral program. Applicants must meet the admissions requirements set by both the graduate school, which are listed in its materials, and the department of history.

Because one of the strengths of our program is a close working relationship between faculty members and students, we cannot always accept qualified applicants when no one in the department can provide the guidance they need in their area of interest. Applicants should explore the listing of faculty on our website and contact the DGS or relevant faculty members if they have any questions.

The complete application contains:

1) A completed application form.

2) A completed financial aid application, if seeking aid.

3) Three letters of recommendation, preferably from the applicant’s former professors.

4) Recent Graduate Record Examination scores.

5) For international students, TOEFL scores.

6) Official transcripts.

7) A detailed statement from the student indicating:
   a) the student’s background and education;
   b) the student’s interests (field, topic, etc.);
   c) why the student wants to pursue a graduate degree in history at the University of Miami; and
   d) what the student plans to do with the degree upon completion.

This statement constitutes a very important part of the application review process and should indicate the student’s understanding of the professional nature of the training that the student is about to begin.

8) A representative writing sample.

Admission from M.A. to Ph.D. Status

Students admitted at the master’s level who are performing well in their studies are encouraged to proceed to Ph.D. status. Advisors who believe that a student should be admitted to the Ph.D. program, and have the consent of the student, inform the DGS of this desire early in the spring semester and at least before the annual departmental meeting reviewing graduate students’ progress. The request is then reviewed by the department at
its annual meeting for recommendation to the graduate committee. Students who move from the M.A. to the Ph.D. program are eligible for the same number of years’ aid as students entering the Ph.D. program directly from the B.A., minus the years of aid they have already received. For course requirements, see below.

Deadlines

January 5: Applications for admissions and aid for Fall semester.

B. Committee

Upon admission to the program, the student is assigned a provisional major advisor. As noted above, students should then concur or select a different advisor by the beginning of the second semester in the program. An advisory committee of four or five, including the major advisor and faculty members representing the second and third fields, must be formed no later than the student’s third semester in the program. Concurrent with the formation of the committee, the student should choose the 4 fields of study. One of these must be from a cognate discipline. It is the responsibility of the student and the advisor to form this committee and notify the DGS of its composition. The major advisor chairs the advisory committee and oversees the student’s course of study and progress in the program. The advisory committee will also administer the oral and written comprehensive examinations. Students may change advisor and other committee members throughout the program provided that the faculty member(s) selected agree(s).

C. Requirements

1a) For students entering the Ph.D. program with a B.A., 45 credit hours (5 semesters) of graduate coursework at the University of Miami.

1b) For students entering the Ph.D. program with a masters from another university, at least 27 credit hours (3 semesters) of graduate coursework at the University of Miami.

1c) For students entering the Ph.D. program with a Masters from another program at the University of Miami, at least 27 additional credit hours (3 semesters) of graduate coursework at the University of Miami.

1d) For students entering the Ph.D. program with a Masters from the History department at the University of Miami, 24 additional credit hours of graduate coursework (to conform to a Graduate School requirement) at the University of Miami.

1e) All doctoral students are expected to take their comprehensive exams no later than their 6th semester in the History Graduate Program at the University of Miami.

2) Completion of History 695 (Historiography), included in the above number of credits. All students are required to take the Historiography course in their first year.

3) Completion of History 693 (the two-semester Research Seminar), included in the above number of credits, at least once. Typically, students take History 693 in their 2nd and 3rd semesters in the program.

4a) Passage of a major field in written and oral exams.
4b) Passage of a 2nd field in written and oral exams.
4c) Passage of a 3rd field in written and oral exams.
4d) Passage of a 4th (cognate) field in the oral exam alone.
5) Following completion of course credit hours, students will need to take sufficient dissertation research credits (History 730 if before the comprehensives have passed; History 740 after the comprehensives have been passed) to reach a total of 60 credits hours beyond the B.A. in order to receive the doctorate. Graduate School rules require that students take a minimum of 12 dissertation credits. Students who enter the Ph.D. program with an M.A. from another university or from another program at the U. of M. receive 30 credit hours towards the 60 credit hour requirement.

The required credits of coursework are only the formal minimum. Although course work is necessary preparation for the comprehensive examination, students are examined on the mastery of fields of knowledge rather than courses. The number of courses taken depends on the student’s background, choice of fields, nature of related work, language skills, etc. Courses should be selected only after consultation with the Major Advisor.

D. Incompletes

All incompletes from the fall semester must be made up by the official end of the following spring semester. All incompletes from the spring semester must be made up before the official start of the subsequent fall semester. No student will be allowed to proceed to exams until all incompletes have been made up.

E. Languages Requirement

Reading knowledge of at least one foreign language is required. More than one foreign language may be required if the major advisor deems it necessary. The Modern Languages and Literatures Department administers examinations in the languages that it teaches and offers preparation courses in a handful of languages. Students may contact the DGS for the various options for taking courses in foreign languages. Students must, in conjunction with their advisor, prepare a plan that specifies how they will demonstrate language proficiency. The language requirement must be completed before a student can take the comprehensive examinations (see below).

F. Comprehensive Examinations

It is the responsibility of the student and major advisor to organize the comprehensive examinations. Students may take them at any time of the year that classes are in session. Arrangements for the exams, including selection of their dates and a final list of committee members, should be made by the end of the first month of the semester in question, with notification to the Department Chair and DGS.

The student takes the written part of the examinations in three history fields, which are normally administered over a period of two successive weeks. The portion for each field is four hours in duration. Only after the advisory committee deems that the student has successfully passed the written portions for each field is the student permitted to take the oral part of the examination.

The oral section covers the three history fields and one cognate field and is approximately two hours in duration. The prospectus may form part of the discussion, but the examination will focus on coverage of the fields. The committee consists of four to five faculty members. One member of the examining committee must be from outside the department. Normally this is the committee member representing the cognate field.

The student advances to candidate status after passing the comprehensive examinations and submitting an acceptable dissertation prospectus.
Students who have not already received a master’s degree from the University of Miami will be awarded an M.A. upon successful completion of their doctoral comprehensive exams.

G. Dissertation

After passing the examinations, students form a dissertation committee. This may be the original advisory committee, but it may also be revised to meet the needs of the dissertation work. The students, in consultation with the Major Advisor, put forward the names of individuals suggested to serve on the dissertation committee. The committee must be comprised of at least three members within the department and one outside the department. The committee is then approved and appointed by the dean of the graduate school.

The dissertation must make a significant contribution to the candidate’s field of specialization. It must meet the highest standards of research, substance, and form, and demonstrate an ability to conduct and report independent and original scholarly investigation.

The student must apply for graduation in his or her penultimate semester (i.e. fall for spring semester).

Upon completion of the dissertation and its tentative approval by the dissertation committee, the student takes a final oral examination that is a “defense” of the dissertation and that lasts for approximately two hours. It is open to the university community. Following the defense of the dissertation, the dissertation committee will render its decision to accept or reject the dissertation. Approval of the dissertation must be indicated by the signature of all members of the dissertation committee.

H. Fields

Chronological/Geographical fields
Medieval Europe
Early Modern Europe
Modern Europe
Early American History
Modern U.S. History
Colonial Latin America
Modern Latin America
East Asia
Russia
Africa
Caribbean

Topical Fields. These must cover either two of the geographic or two of the temporal fields listed above.

African Diaspora
Race and Ethnicity
Gender and Sexuality
History of Religion
History of Science and Medicine
History of Crime and Law
Political History
Diplomatic History
Urban and Environmental History
Economic History
Business History
Labor History
History of Sport
Military History
Cultural and Intellectual History
Public History
Atlantic World

Customized Fields

Students may create their own fields in consultation with their advisory committee. The student opting for this approach must file a plan of study listing relevant courses, the faculty member(s) involved, and the rationale. To pursue the individualized concentration, the student must obtain written approval of the plan by the major advisor, DGS, and the Department Chair.

The plan and signed approvals are placed in the student’s file. With rare exceptions, a customized field may not be the major field of study.

History Course Listing
The Master of Arts in International Administration (MAIA) program offers an interdisciplinary professional degree. The program prepares students for careers in government, as well as multinational corporations (MNCs) and non-governmental organizations (NGOs). Unlike conventional “international affairs” programs, MAIA equips graduates with both operational skills and a solid conceptual background to produce theoretically capable practitioners. The degree is awarded by the College of Arts and Sciences.

MAIA is a university wide program with faculty members coming from twelve (12) University departments. Drawing from the best academic resources of the University of Miami and from highly skilled professionals, students receive instruction in areas such as diplomacy, geopolitics, economics, history, religion, communication, political science, management and international studies. The program features advanced study in specialized subject areas ranging from public health to marine affairs.

Students may also select regional specializations which require language and cultural competency. Expanding on the regional specializations, MAIA students may participate in semester exchange programs with leading foreign universities such as Charles University Law School in the Czech Republic and Saint Petersburg State University in Russia. Additionally, MAIA also offers summer programs in Argentina, France, Ghana and Russia with practicum opportunities in Ecuador, Guatemala and Peru.

For additional program information and a complete list of MAIA faculty and staff, please visit us at www.miami.edu/maia.

Core Requirements
Six (6) core courses are required of all MAIA students. Students then complete the degree with three (3) graduate-level electives/nine (9) credits, which may be chosen from among other UM graduate offerings. Finally, all MAIA students must enroll in and complete a practicum, details of which are described below. The core courses are taught in an integrated fashion, designed to give students the maximum learning experience.

In the core courses, students will
1. develop skills in writing, speaking, and numerical and historical analysis
2. learn how to collect, interpret and report social, political, and economic data
3. increase skills in methods of research and communications
4. master strategic and tactical thinking and negotiation
5. build practical and theoretical knowledge in international relations, international economics, intercultural communication, and administration in an international context

Core courses are
1. International Administration (IGS 612)
2. World Affairs (IGS 614)
3. World Cultures (IGS 613)
4. Organizational Administration (IGS 616)
5. International Economics (IGS 615)
6. International Organizations (IGS 611)
Practicum in International Administration (IGS 517)
The purpose of the practicum is to give students the opportunity to apply academic theory and acquired skills in international administration under real world conditions. Students are expected to complete the practicum with a minimum time commitment of at least two-hundred (200) hours. Participation in the spring clinics with topics ranging from public speaking to human resources are an integral component of the course. A final report/case study analysis is required as part of successful completion of the practicum. A fuller guide to the practicum and the requirements for the practicum is provided to students by the MAIA Office.

Other Requirements for Graduation
In addition to completing thirty (30) credits at the graduate level, which must include the six (6) required core courses, the practicum course and nine (9) elective credits, students must satisfy the following additional program requirements.

The information technology (IT) boot camp is an intensive program, which is generally in the fall semester. The MAIA IT boot camp provides training in Word, Excel, Access, and PowerPoint. Students also receive training to the statistical software SPSS as an introduction to program evaluation/assessment methodology.

The accounting and taxation boot camp is a two (2) day, non-credit workshop that covers key subjects essential to successful budgeting and financial control for nongovernmental organizations and other not-for-profit companies. It is taught by a professional financial manager and is offered once a year.

MAIA students must demonstrate proficiency in a second language prior to graduation. They are tested by staff and faculty with the Intensive Language Institute of the Division of Continuing and International Education. If students need additional language training after the testing result, they will be recommended to enroll in non-credit language courses to attain the necessary proficiency.

All MAIA students must complete their degree with three (3) graduate level elective courses or nine (9) elective credits. Electives must be approved by MAIA directors and students are encouraged to use the electives to create a specialization in either a function or regional area. For example, students may specialize in marine affairs by taking courses with the Rosenstiel School of Marine and Atmospheric Science or in a region by taking courses with the College of Arts and Sciences. Students may also select electives from Charles University Law School in Prague or Saint Petersburg State University in Russia.

Interdisciplinary Global Studies (IGS) Course Listing

Dual Degree Program: MAIA/MPH
The Master of Arts in International Administration/Master of Public Health (M.A.I.A.|M.P.H.) degree is offered jointly by the University of Miami College of Arts and Sciences and University of Miami Miller School of Medicine. The MAIA degree with a second master's degree in public health is designed for students who seek an in-depth knowledge of public health with a broader emphasis in globalization and health, international health policy and international development. Students enrolled in this joint program can expect to complete both degree requirements within three (3) years.
INTERNATIONAL STUDIES - Dept. Code: INS
www.as.miami.edu/international-studies/

DEGREE PROGRAMS

The Department of International Studies offers interdisciplinary social science programs leading to the Ph.D. and MA degrees. Ph.D. and MA programs offer advanced students the opportunity to study issues such as globalization, democratic governance, comparative and international political economy, post-Cold War conflicts and security threats, and new forms of civil society mobilization in world politics. To organize the study of these debates in the social sciences, the Department offers three fields of specialization:

• **International Relations**: international relations theory; globalization; social movements beyond the nation-state; security studies; peace and conflict studies; international law and organization; international political economy; foreign policy analysis, global public health, and related fields.

• **Comparative Politics**: theory and methods of comparative analysis; authoritarian and democratic political regimes; democratic governance and citizenship, comparative political economy; contentious politics and social movements; civil-military relations; and appropriate courses on selected regions, such as the European Union, Latin America, or the Post-Soviet countries.

• **International and Comparative Political Economy**: the politics and institutions regulating the global trade, investment, and financial regimes; comparative international development; the politics and economics of international environmental regimes; democracy, partisan politics, and global governance, the domestic and international distributive impacts of globalization; and international economic theory.

Ph.D. Degree Requirements

The Department’s Ph.D. program’s primary objective is to prepare a select group of highly qualified doctoral students for careers in academic teaching and research. The requirements include:

• Complete a total of 66 degree credits (12 semester courses) to obtain the Ph.D. degree (i.e., 36 credits at the doctoral level beyond the MA degree).

• Complete one seminar on quantitative methods and one seminar on qualitative methods in the social sciences.

• Complete a sequence of two core seminars in two of the Department’s three major fields of study: International Relations; Comparative Politics; and International and Comparative Political Economy.

• Pass written and oral examinations in two of the Department’s three fields of study.

• Complete at least one of the basic core seminars in the third (non-examination) field.

• Complete the Doctoral Workshop.

• Successfully defend a dissertation proposal/prospectus.
• Pass a foreign language examination.

• Complete 12 dissertation credits.

• Research, write and orally defend a dissertation that makes an original contribution to knowledge.

• See the INS Graduate Student Handbook (http://www.as.miami.edu/international-studies/pdf/Graduate%20Student%20Handbook.Fall%202010.pdf) for a complete description of the requirements for the Ph.D. degree.

**MA Degree Requirements**

The Department’s MA program prepares students for careers in international diplomacy, business, trade and finance, for service in government and non-governmental organizations and international institutions, and with the necessary degree and academic training to enter a doctoral program. The requirements include:

• Complete ten semester courses (30 credits).

• Complete a seminar on social science methodology.

• Complete two of the core seminars in one of the Department’s fields of study, and at least one of the core seminars in either of the other two fields. These fields include: International Relations; Comparative Politics; International and Comparative Political Economy.

• Pass a written qualifying (comprehensive) examination in one of the three fields of specialization.

• Pass a foreign language examination.

• MA candidates with a cumulative grade point average of at least 3.5 may, with the permission, substitute the qualifying examination with a written MA thesis.

• See the INS Graduate Student Handbook (insert link) for a complete description of the requirements for the MA degree.

[International Studies Course Listing](#)
LATIN AMERICAN STUDIES - Dept. Code: LAS
http://www.as.miami.edu/lasp/degrees/masters
http://www.as.miami.edu/lasp/degrees/masters-gis
http://www.as.miami.edu/lasp/degrees/journalism
http://www.as.miami.edu/lasp/degrees/filas

DEGREE PROGRAMS

MASTER OF ARTS IN LATIN AMERICAN STUDIES

A. The Master of Arts in Latin American Studies is a 30-credit interdisciplinary degree characterized by a high degree of flexibility in allowing students to create course of study focused on Latin American and the Caribbean that serves the interests of the student. Combining core courses offered by the program with a large variety of co-listed and cross-listed courses offered by departments, programs, and units throughout the University of Miami, the program is able to offer a tremendous amount of diversity in courses available for credit towards this degree. This allows students to combine course offerings from around the university into a cohesive course of study that allows them to specialize in an area, topic, country, theme, or issue of their choosing and thus to tap into the many resources available at the University of Miami for students with a passion for Latin America and the Caribbean.

B. The program consists of two core Latin American and Caribbean seminars, two regional fundamentals, and a minimum of three additional seminars to be taken as electives. Students will also be required to take one research methods course at the 500-level.

1. The core seminars are: LAS501 “Graduate Seminar in Latin American Studies” and LAS502 Research Design in Latin American Studies”

2. Regional Fundamentals are those courses that have a clear regional or sub-regional focus (e.g. Andean Region; the Caribbean; South America; Central America; Southern Cone; Brazil; South Florida) rather than a specific country focus.

3. Electives may be taken from any pre-approved co-listed, cross-listed, or core LAS courses at the 500-level or above, or with the approval of the degree director.

4. A Research Methods course may be chosen from any available and accessible Research Methods courses available at the University of Miami, but must be appropriate to the course of study chosen by the student and requires approval of the degree director. Under special circumstances, the research methods requirement may be waived with the prior approval of the degree director.

C. Students are required to write a master’s thesis, create an equivalent capstone project, or pass a comprehensive exam. The latter two options require the approval of the degree director. For each of these options, a committee consisting of at least three members is required. Students who opt for the comprehensive exam will take two more electives in the place of six credits of LAS710.
D. Students must demonstrate advanced language competence in Spanish, Portuguese, Haitian Creole, or French by passing a course taught in the target language at the 500-level or above, or by passing a language competency exam.

E. With approval from the Director of Latin American Studies degree programs, students may also take their elective credits with Latin Americanists in other Schools such as Communication, Law, Business, or Marine Sciences.

F. Students who are simultaneously enrolled in a certificate program (other than GIS) at the University of Miami may double-count courses between the certificate program and the Master of Arts in Latin American Studies, with approval of the degree director. In select cases (such as methods courses), seminars and courses at the 500-level that do not specifically target Latin America or the Caribbean but for which the final project or paper produced by the student is focused on Latin America may be counted towards the Master of Arts in Latin American Studies, subject to the approval of the degree director.

MASTER OF ARTS IN LATIN AMERICAN STUDIES WITH GIS CERTIFICATE

A. The Master of Arts in Latin American Studies with GIS certificate is a 30-credit interdisciplinary degree characterized by a high degree of flexibility in allowing students to create course of study focused on Latin American and the Caribbean that serves the interests of the student, while allowing students to focus on obtaining specific skills in geographic Information Systems (GIS). Combining core courses offered by the program with a large variety of co-listed and cross-listed courses offered by departments, programs, and units throughout the University of Miami, the program is able to offer a tremendous amount of diversity in courses available for credit towards this degree. This allows students to combine course offerings from around the university into a cohesive course of study that allows them to specialize in an area, topic, country, theme, or issue of their choosing and thus to tap into the many resources available at the University of Miami for students with a passion for Latin America and the Caribbean.

B. The GIS option allows students to work towards a graduate certificate in GIS through the department of Geographic and Regional Studies while working towards their Master of Arts in Latin American Studies.


D. Students in this program will have six credits in LAS710 which will consist of a GIS capstone project with a focus on Latin America, the Caribbean, or South Florida. Students will require a three-member committee to oversee the capstone project. A group project may be allowed with approval of the degree director.

LATIN AMERICAN STUDIES AND JOURNALISM DUAL M.A. DEGREE

Offered in the multi-cultural setting of Miami, a focal point for Caribbean Basin economic, political, immigration and communication flows, the School of Communication and College of Arts and Sciences have designed this joint degree program focusing on cross-cultural and international journalism. Students leave the university after four semesters and a summer
with two M.A. degrees in hand, one in Journalism and the other in Latin American and Caribbean Studies. This specialized course of study is for students who wish to enter careers in journalism and communication specializing on the issues, economies, and peoples of Latin America and the Caribbean region. Sustainable economic development, immigration, social justice and human rights, the environment, international business, and U.S.-Latin American relations are just some of the areas in which students may specialize in an individually tailored course of study anchored by a core of fundamentals. Because this is a joint offering, 18 credits are shared between the two M.A. programs.

FIRST FALL SEMESTER REQUIRED COURSES (based on availability): 12 CREDITS

CNJ 611 News Writing and Reporting Seminar (3) or
CEM 606 Writing and Reporting Across Platforms
LAS 501 Graduate seminar in Latin American Studies (3)
CNJ 510 Comparative Media Systems (3)
LAS 503 Program Seminar in Latin American Studies and Caribbean Studies (3)

FIRST SPRING SEMESTER REQUIRED COURSES: 12 CREDITS

CNJ 619 Advanced Newsgathering and Writing Seminar (3)
LAS 502 Interdisciplinary Research Methods (3)
CNJ 599 Advanced Projects and Directed Research (3)
LAS 503 Program Seminar in Latin American Studies and Caribbean Studies (3)

SUMMER SEMESTER REQUIRED COURSES: 5 CREDITS

LAS 505 Internship in Latin American and Caribbean Studies (5)

SECOND FALL SEMESTER REQUIRED COURSES: 13 CREDITS

COM 601 Theories of Communication (3)
COM 545 Intercultural Communication: International Perspectives (3)
LAS 503 Program Seminar in Latin American Studies and Caribbean Studies (3)
CNJ 654 Writing for Publication (3)
LAS 710 Pre-candidacy Thesis Credits (1)

SECOND SPRING SEMESTER REQUIRED COURSES: 12 CREDITS

CNJ 614 Media Law and Ethics Seminar (3)
LAS 503 Program Seminar in Latin American Studies and Caribbean Studies (3)
CNJ 654 Writing for Publication (3)
LAS 710 Pre-candidacy Thesis Credits (3)

TOTAL CREDITS (for the MA in Journalism) = 36 CREDITS

**FILAS (Fellows in Latin American Studies)**

In this highly selective Honors Program, students follow a rigorous, accelerated curriculum to complete a dual degree (B.A./M.A.) in Latin American and Caribbean Studies in five years. The program provides exciting collaborative research, travel, and work opportunities.

Working with UM’s world-class faculty in various academic disciplines, **FILAS** participants design individualized curricula. In addition to the regular general education course requirements of the
College of Arts and Sciences, FILAS students choose one focus track for their most advanced courses: Social Sciences, Literature & Culture, Communication, Public Health, Environmental Studies, or History. For broad-based, multi-disciplinary preparation, students choose courses that focus on Latin America and the Caribbean from the following categories (at least ten of these courses must be taken at the Master’s level):

- Two History courses
- Two International Studies courses
- Two Economics courses
- Two advanced Languages and Literatures courses (SPA, POR, FRE, or HAI)
- Seven courses in Study Abroad
- One course as internship/co-op credits
- Five courses above the 300-level (third-year) in a range of disciplines
- Ten courses in one focus track Six thesis credits (LAS710)

**Six thesis credits (LAS710)**

**150 total credits**

FILAS students also write a thesis based on an original research project. In addition, they present their findings in a meeting of the UM Center for Latin American Studies in their final semester.

**FILAS ADMISSION REQUIREMENTS**

- SAT1 composite score of 1360 or ACT 31.
- Top 10% of high school graduating class.
- Regular Application for Admission to the University of Miami. We recommend students submit their applications by November 15.
- Recommendations from three high school teachers.
- Statement of interest in FILAS, emphasizing prior language or area study
- To continue through the Master’s level, students must maintain at least a 3.4 GPA and they must take the GRE Exam.

**REQUESTS FOR INFORMATION**

For more information, contact:

LAS Degree Programs
University of Miami
1111 Memorial Drive
Coral Gables, FL 33124-2302
(305) 284-8180
FAX (305) 284-2796
lasgrad@miami.edu

[Latin American Studies Course Listing](#)
LIBERAL STUDIES - Dept. Code: MLS
www.as.miami.edu/mals

DEGREE PROGRAMS

The Liberal Studies program is founded on an interdisciplinary approach to issues and questions central to the history and development of human culture. It is designed to provide a broad understanding of these issues and questions through a focused and systematic program of study drawing upon faculty from various disciplines in the humanities, the social sciences, and the basic sciences.

THE MASTER OF ARTS IN LIBERAL STUDIES

The Master of Arts in Liberal Studies degree requires 24 credits, plus a six-credit thesis OR an additional six credits of coursework and a representative portfolio. In addition all students are required to participate in the MALS Writing Seminar. The curriculum is drawn from three core courses as well as additional courses designed for MALS students. Students may select from other graduate level courses with the approval of the director.

For the program with a thesis, a candidate must complete a minimum of 30 credits on the graduate level which includes:

- Three 3-credit core courses.
- 15 approved graduate credits.
- Six credits for thesis.

For the program without a thesis, a candidate must complete a minimum of 30 credits on the graduate level which includes:

- Three 3-credit core courses.
- 21 approved graduate credits.
- A portfolio representative of works completed.

For further information regarding this program, please write to:

Master of Arts in Liberal Studies Program
125-G Memorial Classroom Building
Coral Gables, FL 33124-2302

Call 305-284-6731 and/or email mals@miami.edu

Liberal Studies Course Listing
MATHEMATICS - Dept. Code: MTH
www.math.miami.edu

DEGREE PROGRAMS

The Mathematics Department offers graduate degree programs leading to the

- Master of Arts
- Master of Science
- Doctor of Philosophy

Prerequisites and requirements for these degrees are described below:

MASTER OF ARTS IN MATHEMATICS

A. Prerequisite:

A minimum of nine credits in mathematics courses numbered 200 and above is required.

B. Requirements:

1. A total of 30 credits must be earned; at least 18 credits of which are in mathematical courses numbered 500 or above. These courses must include at least one of the following year-long sequences: 513-514, 515-516, 524-525, 531-532, 533-534, and 561-562. All courses from other departments must be numbered 600 or above, be pertinent to the teaching of secondary school mathematics, and be approved by the graduate committee.

2. A three-hour written examination covering the material in one of the year-long sequences listed above.

MASTER OF SCIENCE IN MATHEMATICS

A. Prerequisite:

A minimum of 15 credits in mathematics courses numbered 200 and above is required.

B. Requirements:

1. A total of 30, 33, or 36 credits in approved courses must be earned, depending on whether at least 15, 12-14, or 9-11 credits, respectively, are in mathematics courses numbered 600 and above.

2. A minimum of 24 credits must be earned in mathematics courses.

3. At least two of the basic sequences 531-532, 533-534, and 561-562 are required.

4. Three written exams, at least two of which are on the basic sequences of the above list, must be passed.
DOCTOR OF PHILOSOPHY IN MATHEMATICS

The following requirements are in addition to the general requirements for the Doctor of Philosophy Degree as described by the Graduate School (see section on Doctor of Philosophy elsewhere in this Bulletin).

1. A minimum of 36 credits must be earned in mathematics courses numbered 600 and above.

2. All four basic sequences 630-631, 632-633, 640-641, and 661-662 or their equivalents are required.

3. Preliminary and three written qualifying exams must be passed. Of these written exams, two must be from the above basic sequences; the other may be another from the basic sequences or in the candidate’s area of specialty.

4. A proficiency in one of the languages French, German, or Russian must be demonstrated.

Mathematics Course Listing
DEGREE PROGRAMS

The Department of Modern Languages and Literatures offers programs leading to the Ph.D. in Romance Studies with concentrations in French and Spanish. Graduate course work comprehends all major periods and areas, providing the breadth needed for interdisciplinary work and required of today’s teachers. The program is designed to prepare students for careers as university professors, teachers and research scholars. It includes training in advanced language, teaching, and research skills that may also contribute to other professions.

For additional information on teaching and research opportunities, faculty, program policies and application requirements, visit http://www.as.miami.edu/mll/graduate/.

The Ph.D. in Romance Studies (with concentrations in French and Spanish) is designed to prepare you for a career as a university professor and research scholar. It also provides training in advanced language, teaching, and research skills that can be used in other professions. The requirements set out below for the Ph.D. in Romance Studies are minimum requirements; the Committee on Graduate Studies, the Director of Graduate Studies, or your advisor may set additional requirements.

1. 
   a) for students entering on the “five year plan” (B.A. or M. A., see below), passing satisfactorily a minimum of 45 credits in approved courses;
   b) for students entering on the “four year plan” (M.A., see below) passing satisfactorily a minimum of 36 credits in approved courses;

2. passing “Introduction to Literary Theory” (MLL 611; former MLL 505), “Introduction to Modern Language Teaching” (MLL 611; former MLL 503), and a minimum of 3 graded credits in each of the following areas:

<table>
<thead>
<tr>
<th>French</th>
<th>Spanish</th>
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<tbody>
<tr>
<td>• Middle Ages and/or 16th Century</td>
<td>• Middle Ages and/or Golden Age 18th Century</td>
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<tr>
<td>• 17th Century and/or 18th Century</td>
<td>• 20th Century Spain and/or 20th Century Spain</td>
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<td>• 19th Century and/or 20th Century</td>
<td>• Colonial Latin America 18th Century</td>
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<td>• Francophone Studies</td>
<td>• 19th Century Latin America 20th Century</td>
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<td>• 20th Century Latin America</td>
<td>• 20th Century Latin America</td>
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</tbody>
</table>

Note: Ordinarily, students will take at least two graduate courses in the department each semester.
3. In addition to proficiency in English and the language of study, demonstrating the following
   a) Reading knowledge of two other languages, or
   b) Holistic knowledge of one other language by passing the equivalent of a course on at least the 300-level;

Note: In consultation with the student’s advisor, appropriate languages of study will be determined (e.g. Latin American literature students may be encouraged to study Portuguese; students of Early Modern literature may be encouraged to study Italian, etc.)
   c) If area of specialization is Medieval or Early Modern (including Colonial Latin America), then also demonstrating reading knowledge of Latin.

4. Passing a breadth exam that covers either three periods in one region or two periods in two regions;

5. Passing a qualifying exam, on an approved topic;
The exam includes three general approaches that focus on literature, theory, and a cognate discipline (e.g. history, sociology, art, film, etc.);

6. Successfully defending a dissertation prospectus;

7. Completing and defending satisfactorily a dissertation;

8. Satisfying the requirements of the Graduate School as stated in the Bulletin.

ADMISSIONS REQUIREMENTS

We accept applications for Fall admission only, and only for doctoral study (we do not have an independent Master’s program). You may apply for the Ph.D. while holding either a B.A. or an M.A. degree.

The priority deadline to apply to begin classes in Fall 2011 is December 1, 2010 (all fellowships and most teaching assistantships are awarded to those who apply by this deadline). However, we will continue to accept applications through January 15, 2011.

Your completed application must include the following (incomplete applications will not be considered):

1. A completed application form, including a detailed statement of purpose. We only accept on-line applications. Visit our web page for on-line application instructions: http://www.as.miami.edu/mll/graduate/admissions.html

2. A completed Graduate Assistantship Application (to be considered for departmental and university awards).

3. Three substantial letters of recommendation (please provide each recommender with a cover sheet, available on line at: http://www.as.miami.edu/mll/graduate/admissions.html). Or use CollegeNet interface capability to have recommenders submit letters of recommendation online.
4. GRE scores, mailed directly from the testing agency (optional if you hold an M.A. degree and do not wish to be considered for fellowships. But we strongly recommend that you take the GRE because in case of equal qualifications we will give priority to student’s files that show GRE scores. Please remember to request school code to be 005815 for the University of Miami and Dept. Code 2603 copy for French and Dept. Code 2608 copy for Spanish.)

5. Official transcripts from all colleges and/or universities you have attended and listed in your application. If the transcripts are from international institutions, you must provide an official translation.

6. A substantial writing sample in English (research papers are preferable)

7. A substantial writing sample in the language of study (French or Spanish; research papers are preferable)

8. International students only: TOEFL scores, mailed directly from the testing agency

9. Application fee of $65.00.

Letters of recommendation and other printed materials should be sent to:

Graduate Program Admissions
Department of Modern Languages & Literatures
University of Miami
P. O. Box 248093
Coral Gables, Florida 33124-4650
FAX: 305-284-2068
E-mail: grad.mll@mail.as.miami.edu

We strongly encourage African-American and Hispanic candidates to apply for the Florida Education Fund domestic African American and Hispanic McKnight Doctoral Fellowships. Applications must be postmarked no later than January 15th of each year. The Fellowship is open to any incoming domestic Ph.D. African American or Hispanic student in ANY discipline. You may apply online at www.fefonline.org. The Florida Education Fund may be reached at (813) 272-2772. If an applicant who is accepted into our Ph. D. program receives a McKnight Fellowship, the College of Arts and Sciences will increase the amount of the fellowship’s stipend to match the current Teaching Assistantship stipend amount. Please note: If an applicant encounters any difficulty submitting the online application, the applicant should contact the FEF webmaster at webmaster@fefonline.org or call 813-943-7578 for assistance.

Course Listings for:

Modern Languages and Literatures

French

Spanish
DEGREE PROGRAMS

A. Course requirements

Satisfactory completion of a minimum of 45 course credits in philosophy, at least 24 of which must be at the 600 level. Students are required to pass the following courses:

1. Proseminar: PHI601 and PHI602
2. Logic requirement: PHI510
3. Ethics requirement: PHI530 or 533.
4. One course from the epistemology and metaphysics group: PHI540-545.
5. One course from the history group: PHI560-583 (except PHI 582).

In some cases certain course requirements may (with the approval of the director of graduate studies) be waived for students who have completed equivalent work as part of a prior M.A. degree in philosophy.

B. Qualifying examination

A comprehensive qualifying examination must be taken. Exams are given the grade of O, 1, or 2. A grade of 1 or 2 is sufficient for the student to be awarded the M.A. The qualifying examination is a broad examination in a general area of philosophy close to the student’s proposed dissertation topic or intended area of specialization, for example, epistemology, philosophy of mind, metaphysics, or ethics and political philosophy. The examination is based on a list of core texts in the area in question, with the required texts chosen for each student individually by his or her qualifying examination committee. The exam may be attempted at most two times.

C. Satisfying the requirements of the Graduate School as stated in this Bulletin.

The requirements for the Ph.D. degree in philosophy

A. Course requirements

Satisfactory completion of a minimum of 45 course credits in philosophy, at least 24 of which must be at the 600 level. Students are required to pass the following courses:

1. Proseminar: PHI601 and PHI602
2. Logic requirement: PHI510
3. Ethics requirement: PHI530 or 533.
4. One course from the epistemology and metaphysics group: PHI540-545.
5. One course from the history group: PHI560-583 (except PHI 582).

In some cases certain course requirements may (with the approval of the director of graduate studies) be waived for students who have completed equivalent work as part of a prior M.A. degree in philosophy.

Research Requirement: In addition, students are required to enroll in and complete 15 credits of PHI730 (Doctoral Dissertation Research).
B. Qualifying examination

A comprehensive qualifying examination must be taken. Exams are given the grade of either 0, 1, or 2. A grade of 0 or 1 is considered a failing grade with respect to qualifying to continue in the Ph.D. program. A student must receive a grade of 2 in order to proceed to the dissertation stage. The qualifying examination is a broad examination in a general area of philosophy close to the student’s proposed dissertation topic or intended area of specialization, for example, epistemology, philosophy of mind, metaphysics, or ethics and political philosophy. The examination is based on a list of core texts in the area in question, with the required texts chosen for each student individually by his or her qualifying examination committee. The exam may be attempted at most two times.

Students can apply for Ph.D. candidacy after they have completed their coursework, received a mark of high pass on the qualifying examination and had their dissertation proposal approved.

C. The language requirement

A student who submits a dissertation proposal must possess the linguistic proficiency required by the proposed dissertation topic. This is determined by the dissertation proposal committee on the basis of examinations or coursework.

D. Ph.D. dissertation

Presentation and oral defense of an acceptable dissertation.

E. The requirements of the Graduate School as stated in this Bulletin

Philosophy Course Listing
DEGREE PROGRAMS

All graduate students in physics must plan their entire program with the advice and approval of a departmental advisor.

The program of graduate studies in physics emphasizes research work, but also includes teaching experience as an essential element. Research and thesis opportunities are at present available in the fields of astrophysics and cosmology, atmospheric and ocean optics, complexity, condensed matter physics, elementary particle theory, plasma physics.

In addition to the general requirements for graduate degrees, the Physics Department makes the following specific requirements.

A. Submission of scores on the Graduate Record Examination (Aptitude Test and Advanced Test in Physics) with the application for admission.

B. A minimum of 24 physics course credits at the 500-600 level are required for the PhD.

C. The following specific courses, or their equivalent, are required for the PhD degree: PHY 540, 560, 561, 623, 650, 651, 670, 671. Also required: three additional physics lecture courses at the 500 or 600 level.

D. For the M.S. degree no more than three credits for reading courses may be counted, and no more than two credits of seminars. Up to six credits may be earned in thesis work for this degree.

E. The physics department offers a comprehensive graduate examination each year. A passing grade at an appropriate level is required for either the M.S. or the Ph.D. A student is required to take the exam each year and is allowed two attempts toward a passing grade.

F. Courses taken outside the department should be relevant to the students’ program and approved by the graduate advisor.

G. Students are required to participate in research at the earliest opportunity. Specifically, upon passing the written graduate examination and before the end of the following semester, the student is required to select a faculty member who consents to serve as the student’s Ph.D. thesis advisor. Student and thesis advisor are to form, in a timely fashion, a dissertation committee to review an oral presentation of the student’s initial research activities and future plans. Should a student need to select a new thesis advisor, this selection must be made without delay, and the review process must be repeated.

H. Renewal of financial support from the department is contingent, each semester, upon satisfactory performance of teaching duties and research activities, and upon timely progress towards completion of all requirements for the Ph.D. degree.
POLITICAL SCIENCE - Dept. Code: POL
www.as.miami.edu/mpa

DEGREE PROGRAMS

The Department of Political Science offers a Master’s degree in Public Administration.

The requirements for the Masters in Public Administration degree are:

A. Thirty-six to forty-eight credits at the graduate level, depending on government management experience and academic preparation.

B. Completion of core and specialized track course requirements as specified by the POL Department in consultation with the student’s career goals and interests.

C. An option exists for those students who wish to complete in five years their Bachelor’s degree and a Master of Public Administration. Contact POL Department for details.

D. All other requirements as stated in sections Requirements for the Master of Arts Degree and General Information.

SECOND MASTER’S DEGREE IN PUBLIC HEALTH (MPA/MPH)

The Master of Public Administration/Master of Public Health combines programs from the College of Arts and Sciences and the School of Medicine and is designed for students who seek an in-depth knowledge of management and public policy administration with training in public health.

It is possible for full-time students to complete the requirements for both degrees requirements within two and one-half years.

Interested students must apply and be accepted by both Departments. For further information, contact the Department of Political Science at (305) 284-2401 or the Department of Epidemiology and Public Health at (305) 243-6759.

Political Science Course Listing
PSYCHOLOGY - Dept. Code: PSY
www.psy.miami.edu

DEGREE PROGRAMS

Ph.D.

I. The principal goal of the graduate program in Psychology is that of preparing the student for a career contributing to the growth of scientific knowledge in psychology.

II. Applicants for admission to graduate status in psychology shall have

   A. a minimum average of B over-all
   B. at least 18 hours of psychology that must include courses in Introductory Psychology, Statistics, and Experimental Psychology or Research Methods.
   C. Students lacking the necessary preparation must ordinarily make up deficiencies prior to admission to the Graduate School.

III. All applicants must present the Graduate Record Examination (Aptitude Tests; Advanced Test in Psychology preferred). In all cases admission to graduate degree programs in Psychology is competitive, since available resources do not permit admission of all qualified applicants.

IV. The Ph.D. programs are categorized into three Divisions:

   • Health Psychology (including Health Clinical Psychology, Behavioral Medicine and Behavioral Neurosciences)
   • Child Psychology (including Clinical Child Psychology, Pediatric Health Psychology Applied Developmental Psychology)
   • Adult Psychology (including Adult Clinical Psychology)

   1. All Ph.D. programs in Psychology require a minimum of 72 credits, including thesis and dissertation credits.
   2. Psychology 680 and 681 will not be counted toward the 72 credit minimum.
   3. A Master of Science in Psychology based upon 24 credits of course work and six credits of Master’s thesis research is required in all programs.
   4. In cases in which a student has a prior graduate degree, the number of credits required for the Ph.D. may be reduced at the discretion of the Department.
   5. All programs in Clinical Psychology require an internship.

V. All students must successfully complete six foundation courses.

   A. PSY 604, 605, 614, 620, 625, and 640 or 641.
   B. Methodological courses 631, 632, and either 633, 634 or 698.
   C. A minimum grade average of B is required for all students.
   D. All students seeking an advanced degree in Psychology must participate substantially in the teaching of course offerings in the Psychology Department as an essential part of their education.

Psychology Course Listing
RELIGIOUS STUDIES - Dept. Code: REL

The Department of Religious Studies does not offer a graduate degree program. The graduate level courses may be taken for graduate credit with the consent of the major department.

Religious Course Listing
SOCIOMETRY - Dept. Code: SOC

www.as.miami.edu/sociology

DEGREE PROGRAMS

I. Graduate Program Overview

The Graduate Program in Sociology at the University of Miami is designed to equip students with the theoretical, methodological, and analytical tools required for research and teaching. The Graduate Program in Sociology offers two graduate degrees, the Master of Arts (M.A.) and the Doctor of Philosophy (Ph.D.). At the doctoral level, graduate students are encouraged to choose two concentrations from three substantive areas: (1) Criminology, (2) Race & Ethnic Relations, and (3) Medical Sociology. Although the strengths of the department lie within these major programmatic fields, students may also develop a course of study that meets unique research interests and career objectives. Assistantships and Fellowships are awarded each academic year to cover tuition and living expenses.

II. Requirements for the M.A. degree in Sociology:

A. A minimum of 31 credits at the graduate level (500 or 600) of which 6 must be taken in thesis work.
B. A maximum of 6 hours can be transferred from acceptable graduate institutions.
C. Course work must include Sociology 601, 602, 604, 610, 611, and one of 615 616 or 617.
D. 3 hours of course work may be earned in a related discipline. Such course selections must have prior departmental approval
E. Submission and successful defense of a thesis in accordance with current Graduate School policy.
F. The completion of all other requirements stated in sections of the Bulletin that specify Requirements for the Master’s Degree, and General Information.

III. Requirements for the Ph.D. in Sociology:

A. An M.A. or M.S. degree is required.
B. A minimum of 42 credits beyond the M.A. or M.S. degree.
C. Demonstration of computer competency.
D. Passing two written substantive area examinations.
E. The completion of a publishable-quality paper.
F. Written presentation and oral defense of an acceptable dissertation.
G. The satisfactory completion of the requirements of the Graduate School as stated in this Bulletin

For more details, consult the Guide to Graduate Study in Sociology available through the Sociology Department (www.as.miami.edu/sociology/).

Sociology Course Listing
DEPARTMENTs

Accounting
Business Law
Computer Information Systems
Economics
Finance
Management
Management Science
Marketing

DEGREE PROGRAMS

The School of Business offers the following degrees:
Doctor of Philosophy in Business & Doctor of Philosophy in Economics
Master degree in Business Administration (MBA)
Master of Professional Accounting
Master of Science in Taxation
Non-degree executive education programs are also available

The requirements for the Doctor of Philosophy degree are the same as those listed in the general section of this Bulletin.

DOCTOR OF PHILOSOPHY

The Doctoral program combines interdisciplinary study and research. It is designed to prepare students for careers in academic research and teaching. Students follow specialized programs of study under the guidance of faculty experts. In addition, they have the opportunity to participate in cross-disciplinary training outside of the traditional domains of business and economics. The curriculum will also equip students with the skills and experience necessary for academic placement in the world’s top research universities.

A minimum of 60 credits are required to earn the PhD in Business or PhD in Economics degree. The program requires year-round, full-time study in order to maximize interaction between faculty and students. Students are expected to interact and begin research projects with the faculty upon entering the program.

PhD Program in Business Curriculum:

Students may choose to concentrate their study in Accounting, Finance, Management Science, Marketing, Operations Management, Organizational Behavior, or Strategy/International Business.
Required Prerequisite Courses (must be completed prior to admission or in the summer prior to commencing doctoral studies):

One year of college calculus, one course in linear algebra, and one introductory statistics course.

Required “Core” Courses (these courses can be waived by consent of the appropriate department; waiver is granted by issuing transfer credit for similar courses taken at the advanced graduate level at accredited institutions):

There are two streams of “core” courses for students, each comprising of five courses.

**Stream I:** (Accounting, Finance, Management Science, Marketing-Quantitative, and Operations Management)

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ECON 533</td>
<td>Micro Economics I</td>
<td>3</td>
</tr>
<tr>
<td>ECON 521</td>
<td>Macro Economics I</td>
<td>3</td>
</tr>
<tr>
<td>ECON 520</td>
<td>Econometrics I</td>
<td>3</td>
</tr>
<tr>
<td>ECON 620</td>
<td>Econometrics II</td>
<td>3</td>
</tr>
<tr>
<td>ECON 512</td>
<td>Math Economics II</td>
<td>3</td>
</tr>
</tbody>
</table>

**Stream II:** (Marketing-Consumer Behavior, Organizational Behavior, Strategy/International Business)

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<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PSY 631</td>
<td>Psych Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>PSY 632</td>
<td>Psych Statistics II</td>
<td>3</td>
</tr>
<tr>
<td>SOC 610</td>
<td>Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>PSY 625</td>
<td>Social Psychology</td>
<td>3</td>
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and, any one of the following two courses:

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<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>SOC 616</td>
<td>Small Group Theory</td>
<td>3</td>
</tr>
<tr>
<td>ECON 533</td>
<td>Micro Economics I</td>
<td>3</td>
</tr>
</tbody>
</table>

Area of Concentration Courses (to be decided by the student and faculty):

In total, a minimum of 33 credits in concentration courses are to be taken, up to 15 of which may be satisfied by transfer credit. Some Departments may require students to complete a minor field. If so, their major field must consist of a minimum of 24 hours (with at least 15 hours completed in doctoral program residence at the University of Miami). The minor field would then consist of 9-12 hours in an area outside of the major concentration (with a minimum of 9 hours taken in doctoral program residency at the University of Miami).

**Dissertation Research**

12 credits are to be taken at a minimum—two semesters of 6-9 hours each. No transfer credit is given for dissertation or prior research.
Total Credit Requirements

In total, a minimum of 60 credits are required for receiving the Ph.D. degree in Business Administration: 15 hours of "core" courses, 33 hours of "concentration" courses, and 12 hours of dissertation research. To this total must be added any prerequisite courses (as outlined above), with transfer credit being subtracted.

Admissions Requirements:

Application Form
Application Fee of $65.00
GPA of B+ or better in undergraduate and graduate (if any) coursework
Official Transcripts, Copies of Diplomas and/or Certificates
Strong quantitative skills, as demonstrated through GMAT/GRE scores and prior coursework
Potential to conduct and publish high-quality original research
Official TOEFL or IELTS Score Report (International Students only)
Three Letters of Recommendation
Statement of Purpose
Resume

A master's degree or an undergraduate business degree is not required for admission.

Financial aid packages are available to qualified PhD applicants.

PhD Program in Economics Curriculum:

The Ph.D. program in Economics prepares the recipient for a variety of career opportunities, including university teaching, federal, state, and local government employment, and a host of employment opportunities in the private sector.

All Ph.D. students are required to complete sixty (60) credit hours. There are 12 core courses (36 credit hours), two courses in one major field (6 credit hours), one course in a minor field (3 credit hours), one field/elective course (3 credit hours) and the dissertation (12 credit hours). A field is comprised of either two related courses in one of the major economic disciplines, e.g. international trade, or two courses in related disciplines, e.g. health economics and labor economics.

Applicants for admission to graduate study in Economics should have an extensive background in Economic Theory and Quantitative methods.

a. All Doctor of Philosophy students must take the core that consists of the following courses:
   i. 500-level mathematical economics courses (ECO 512)
   ii. a 500-level macroeconomics course (ECO 521)
   iii. a 500-level microeconomics course (ECO 533)
   iv. a 500-level econometrics course (ECO 520)
   v. two 600-level econometrics courses (ECO 620, 625)
   vi. A 500 level mathematics (MTH 533)
   vii. three 600-level microeconomics courses (ECO 633, 634, and 635)
   viii. two 600-level macroeconomics/monetary theory courses (ECO 621, 603)
b. Two fields of specialization are required. A field is comprised of two courses. These two fields are selected from the following areas of concentration:
   i. ECO 603, 604
   ii. international trade (ECO 661, 760)
   iii. human resource economics (ECO 511, 586, 611)
   iv. cognate areas with departmental approval

c. One elective must be taken. Elective courses may be selected from the graduate offerings of the Mathematics, Computer Information Systems, Management Science, and Finance departments.

d. Additional Requirements:
   i. comprehensive examinations covering the core and the one field of specialization
   ii. a doctoral dissertation for 12 credit hours

e. To be considered for admission, all applicants must
   i. score a minimum of 1250 on the Graduate Record Examination general tests (combined verbal and quantitative scores),
   ii. hold a baccalaureate degree from an institution of recognized standing,
   iii. submit two copies of their official undergraduate transcript,
   iv. have demonstrated, by their undergraduate record, capability of completing a Ph.D. program,
   v. In addition, foreign students are required to score a minimum of 90 on the internet based, 600 on the paper based, or 235 computer based Test of English as a Foreign Language.

**Required Admissions Materials:**

Application Form
Application Fee of $65.00
GPA of B+ or better in undergraduate and graduate (if any) coursework
Official Transcripts, Copies of Diplomas and/or Certificates
Official GRE scores report
Official TOEFL Score Report (International Students only)
Three Letters of Recommendation
Statement of Purpose
Resume/CV (optional)

A master’s degree is not required for admissions.

Assistantships are available to qualified PhD applicants. The minimum additional requirements for consideration for an assistantship are a combined GRE score of 1250 and the equivalent of a cumulative "B+" GPA. The program only rarely admits students without an assistantship.
MASTER OF BUSINESS ADMINISTRATION

The University of Miami School of Business offers two full-time Master of Business Administration degrees.

FULL-TIME TWO-YEAR MBA PROGRAM

The Full-time two-year MBA Program is innovative, flexible, and career focused. It is designed to meet the needs of the student with an undergraduate background in business as well as the student who is just entering the business arena. The curriculum not only prepares business leaders of the future, but also adds a valuable dimension to other professions.

UM's Full-time MBA program is a 56-58 credit, lock-step program that is completed in less than two calendar years. Students typically enroll in elective courses during the third semester and the first term of the fourth semester of the program. Students may be able to complete a concentration based on completion of appropriate electives.

CURRICULUM

YEAR ONE
FALL SEMESTER – Building Management Skills

Term 1-1
ACC 670 Financial Reporting and Analysis
BUS 602 Critical Thinking and Effective Writing
BUS 604 MBA Career Development and Enrichment
ECO 685 Managerial Decisions in a Global Economy
MGT 675 Business Policy and Strategy

Term 1-2
ACC 671 Accounting for Decision Making
BUS 603 Critical Thinking and Effective Presentation
MAS 631 Statistics for Managerial Decision Making
MGT 620 Managing Through People

SPRING SEMESTER – Making Management Decisions

Term 1-3
FIN 641 Valuation and Financial Decision Making
MAS 632 Management Science Models for Decision Making
MKT 640 Foundations of Marketing Management

Term 1-4
CIS 610 Foundations of Management Information Systems
FIN 642 The Financial Environment
MGT 643 Principles of Operations Management
YEAR TWO

FALL SEMESTER – Expanding Career Opportunities

Term 2-1
BUS 604 MBA Career Development and Enrichment
Elective
Elective
Elective
Elective

Term 2-2
Elective
Elective
Elective
Elective

SPRING SEMESTER – The Executive Perspective

Term 2-3
Elective
Elective
Elective
Elective

Term 2-4
BSL 690 Legal and Ethical Implications of Business Decision Making
MGT 677 Corporate Strategy and Organization
MKT 650 Strategic Marketing

Students may be able to complete a concentration based on completion of required electives. Areas of concentration include: Computer Information Systems, Finance, International Business, Management, Management Science, Six Sigma, Management Science Consulting, Marketing, Mergers and Acquisitions, and Real Estate. Elective offerings are based on student demand. Students beginning the program in January obtain a cross-functional MBA in lieu of a concentration.

FULL-TIME ONE-YEAR MBA PROGRAM

The Full-time one-year MBA Program is offered once per year in January. This program is designed to meet the needs of the student with an undergraduate degree in business, who graduated in the last seven years from an accredited university. The curriculum prepares business leaders of the future, adding a valuable dimension to their education.

CURRICULUM

The One-Year MBA program is a 35-credit, cohort program that is completed in one year. There are no summer classes. Internship opportunities may be available through the Ziff Graduate Career Services Center during the summer months. The program is “lock-step” and students progress together through a sequential pattern of sixteen 2-credit courses, seven of which are electives and three 1-credit courses. There are two semesters totaling 28 weeks of class time. Each semester consists of two 7 week terms. There are no prerequisite courses required. Concentrations are not available or granted. This multi-disciplinary MBA program will expose students to various areas of business.
SPRING SEMESTER

Term 1-1
BUS 602 Critical Thinking and Effective Writing  
BUS 604 MBA Career Development and Enrichment  
FIN 641 Valuation and Financial Decision Making  
MAS 632 Management Science Models for Decision Making  
Elective  
Elective

Term 1-2
BSL 690 Legal & Ethical Implications of Business Decision Making  
BUS 603 Critical Thinking and Effective Speaking  
CIS 610 Foundations of Management Information Systems  
FIN 642 The Financial Environment  
MKT 645 International Marketing

FALL SEMESTER

Term 1-3
MGT 645 Principles of Supply Chain Management  
MKT 650 Strategic Marketing  
Elective  
Elective

Term 1-4
MGT 677 Corporate Strategy and Organization  
Elective  
Elective  
Elective

ACCELERATED MBA IN REAL ESTATE

The University of Miami School of Business Administration offers a new accelerated MBA program with a concentration in real estate highlighted by two internship opportunities. Bringing together the School’s strengths in management education with the strengths of the UM School of Architecture in new urbanism, the program is designed to prepare students to succeed in commercial real estate market careers.

PROGRAM HIGHLIGHTS

- Six-month paid real estate industry internship prior to first semester  
- Summer real estate industry internship between first and second semester classes  
- Consulting project with real estate industry non-profit organization  
- Specialized MBA curriculum focused on commercial real estate  
- Mentoring
CURRICULUM

The Accelerated MBA in Real Estate program is a 37-credit program that is completed in one year. The program is "lock-step" and students progress together through a sequential pattern of one or two-credit courses. There are two semesters totaling 28 weeks of class time. Each semester consist of two seven week terms. Students are registered for four to six courses per term. Waivers and course transfer are not permitted. Concentrations are not available or granted.

SUMMER SEMESTER

Introduction to Commercial Real Estate Analysis
ARGUS and EXCEL for Real Estate

SPRING SEMESTER

Term 1-1
BUS 602 Critical Thinking and Effective Writing
BUS 604 MBA Career Development and Enrichment
FIN 641 Valuation and financial Decision Making
FIN 645 Real Estate Finance
MAS 632 Management Science Models for Decision Making
MAS 663 Project Modeling
MKT 641 Marketing Research

Term 1-2
BSL 690 Legal & Ethical Implications of Business Decision Making
BUS 603 Critical Thinking and Effective Speaking
CIS 610 Foundations of Management Information Systems
FIN 642 The Financial Environment

FALL SEMESTER

1-3
BUS 604 MBA Career Development and Enrichment
FIN 644 Real Estate Investments and Appraisal
MAS 637 Applied Regression Analysis
MKT 650 Strategic Marketing
RED 601 Real Estate Development

Term 1-4
BSL 694 Real Estate Law
MGT 677 Corporate Strategy and Organization

FULL-TIME MBA DUAL DEGREE PROGRAMS

The University of Miami offers dual degree programs in the areas of JD/MBA, MD/MBA, and BARCH/MBA. Dual degree programs are only available in conjunction with the Full-time two-year MBA Program, with the exception of the JD/One Year MBA and JD/LLM/One Year MBA programs. Admissions and all requirements for each program must be fulfilled in order to apply to the MBA program.
For more information on dual degree programs, please contact the Office of Recruiting and Admissions at 305-284-2510 or visit our website at www.bus.miami.edu/grad.

**INTERNSHIPS**

The School of Business encourages students to augment their classroom experience through a comprehensive internship program. Students who are interested in internships must register with the Ziff Graduate Career Center as soon as they arrive on campus.

**ADMISSION REQUIREMENTS**

The Graduate Admissions Committee welcomes applications from individuals whose undergraduate degrees are from accredited colleges or universities. Acceptance is based upon an evaluation of all credentials presented by the applicant. The following are the requirements for admission for both the Full-time two-year and one-year MBA Programs:

- Completed application, which includes four essays
- Application Fee of $100.00
- Resume
- Transcripts
- Letter(s) of Recommendation
- Official GMAT or GRE score report
- English Language Proficiency Exam, (TOEFL or IELTS), if applicable
- International Student Financial Statement, if applicable
- Campus Visit, encouraged
- Interview, by invitation only.

International applicants must provide an original copy of all transcripts in addition to a certified English translation of said documents as well as a copy and translation of the respective diploma.

**EXECUTIVE MBA PROGRAMS AND THE MBA FOR WORKING PROFESSIONALS**

The University of Miami offers Executive MBA Programs and an MBA for Working Professionals that are designed for accomplished professionals who are ready to take their career to the next level. Participants gain insight and understanding into the business environment by gaining a more global outlook and are better equipped to meet the challenges of today's business world. They become better negotiators, strategic thinkers, and more effective team players in a variety of business related situations.

The Executive MBA and MBA for Working Professionals programs enable students to customize their MBA experience to better meet their industry and career goals - with a wide range of elective courses few other working professionals programs can match. This unique elective opportunity allows students to pursue a number of electives in specialty areas from accounting and marketing to management science and computer information systems. Students will also expand their professional network as they join elective classes with MBAs outside their regular cohort. (Five electives are offered in the Health EMBA program as cohort, lock-step courses that are already built into the curriculum).
CURRICULUM

To obtain detailed program curricula on the Executive MBA and MBA for Working Professional Programs, please reference the program brochures which can be requested by contacting the Office of Recruiting and Admissions at (305) 284-2510 or visit our website at www.bus.miami.edu/grad.

EXECUTIVE MBA

The Executive MBA programs provide business executives and professionals the opportunity to earn an MBA by attending class on Saturdays or in a Friday/Saturday/Sunday structure. These programs include:

- Executive MBA
- Executive MBA - Health Administration and Policy Concentration
- Executive MBA – Off Campus Programs in Palm Beach County Florida and in San Juan, Puerto Rico.

ADMISSION REQUIREMENTS

- Completed application, which includes four essays
- Application Fee of $100.00
- Resume
- Transcripts
- Letter(s) of Recommendation
- Official GMAT or GRE score report, may be required
- English Language Proficiency Exam, (TOEFL or IELTS) if applicable
- Interview required

International applicants must provide an original copy of all transcripts in addition to a certified English translation of said documents as well as a copy and translation of the respective diploma.

MBA FOR WORKING PROFESSIONALS

The MBA for Working Professionals Program also provides professionals the opportunity to earn an MBA by attending class on Monday evenings and Saturday mornings. MBA for Working Professionals programs include:

- MBA for Working Professionals
- Dual Degree Program: MBA for Working Professionals and Master of Science in Industrial Engineering

ADMISSION REQUIREMENTS

- Completed application, which includes four essays
- Application Fee of $100.00
- Resume
- Transcripts
- Letter(s) of Recommendation
- Official GMAT or GRE score report, may be required
- English Language Proficiency Exam, (TOEFL or IELTS) if applicable
- Interview required
International applicants must provide an original copy of all transcripts in addition to a certified English translation of said documents as well as a copy and translation of the respective diploma.

GLOBAL EXECUTIVE MBA IN SPANISH

The Global Executive MBA in Spanish enables participants to broaden their business knowledge, improve their management skills and strategic decision-making abilities, and expand their professional network through close interaction with a select group of business leaders from across Latin America.

The UM Global Executive MBA is taught in seven, two-week sessions.

The program offers a total of 15 courses of which 13 take place on campus in Coral Gables and two abroad during a Residential Session Abroad. The courses are given in sequence; the same group of students advances together throughout the entire program. Students are also offered the opportunity to select 3 elective courses to be taken in the 4th, 5th and 6th session of the program.

A brief two-week residential session abroad provides MBA students with the opportunity to gain international business perspectives, first-hand. As part of this program, students may receive lectures on pressing international business matters, meet prominent local business leaders, tour companies and manufacturing operations, and immerse themselves in a country’s cultural, social, and business environment.

All classes are taught entirely in Spanish, with reading materials in English, so reading-level knowledge of English is required.

CURRICULUM

To obtain detailed program curricula on the Global Executive MBA program, please reference the program brochures which can be requested by contacting the Office of Recruiting and Admissions at (305) 284-2510 or visit our website at www.bus.miami.edu/grad.

Admission Requirements

- Completed online application, which includes four essays
- A bachelor’s degree or its equivalent
- Copy of degree diploma
- Original transcripts for each undergraduate institution attended including the certified English translations
- Resume (applicant must have six or more years of professional work experience)
- Letter(s) of recommendation, one must be from applicant’s employer, or applicant’s client if self-employed
- Reading-level knowledge of English
- Interview, by invitation only
CERTIFICATE PROGRAMS

GRADUATE BUSINESS CERTIFICATE

The Graduate Business Certificate program provides professionals and graduate students an opportunity to add basic business courses to their portfolio. The program consists of four three-credit courses in functional areas of accounting, finance, management, and marketing. Students can take one or more courses for credit but must satisfactorily complete all four courses to be awarded the certificate. Students must have an undergraduate degree to be eligible for this certificate. Classes meet on Saturday from 8:00 a.m. – 12:00 p.m. and 1:00 p.m. – 5:00 p.m.

CURRICULUM

ACC 600 Accounting for Decision-Making and Control (3 credits)
FIN 602 Fundamentals of Finance (3 credits)
MGT 600 Managing Responsible Behavior in Organizations (3 credits)
MKT 660 Foundations of Marketing Management (3 credits)

For complete information on the Graduate Business Certificate program, including course dates and descriptions, please visit the Graduate Business Programs website at www.bus.miami.edu or call 305-284-2510.

ADMISSION REQUIREMENTS

The Graduate Admissions Committee welcomes applications from individuals whose undergraduate degrees are from accredited colleges or universities. Acceptance is based upon an evaluation of all credentials presented by the applicant. The following are the requirements for admission:

- Completed online application
- Application Fee of $100.00
- Resume
- Transcripts
RESEARCH INSTITUTES

INSTITUTE FOR THE STUDY OF QUALITY IN MANUFACTURING AND SERVICE

The University of Miami Institute for the Study of Quality in Manufacturing and Service (UMISQ) exists to advance the theory and practice of Quality Science. Its mission is to promote the improvement and innovation of quality on local, national, and international levels through the acquisition, dissemination, and application of knowledge in the areas of science, technology, and management as related to Quality Science in general, and Lean Six Sigma Management specifically.

Objectives

1. To conduct research in Quality Science and to publish its results through appropriate professional and academic outlets.
2. To educate and train management, labor, UM students, and others in the theories and practices of Quality Science in general, and Lean Six Sigma Management specifically.
3. To create internships for M.B.A. students in which they can solve real world problems using Quality Science theory and practice in general, and Lean Six Sigma management theory and practice in particular.
4. To remain financially self-sufficient.

The Institute pursues its objectives through involvement of faculty, students, and client organizations in all sectors of the economy.

INTELLIGENT COMPUTER SYSTEMS RESEARCH INSTITUTE

The Intelligent Computer Systems Research Institute is a center for research and information dissemination within the field of information business technology. The institute focuses on multi-disciplinary topics such as technology strategy, healthcare informatics, business intelligence, and embedded systems.

The Institute encourages a partnership model between academia and industry. Corporate partners are active in the provision of data, field studies, test environments, and other resources through which leading theoretical work can be developed tested in an applied environment.

The results of the research are developed for publication in leading academic and industry related journals as well as working papers. Industry partners are also actively encouraged to work with students through the creation of internship positions. These internships provide students the opportunity to act as a link between the teaching and research of the institute’s members and the field based applied environment.
THE GRADUATE STUDENT ASSOCIATION

The Graduate Student Association (GSA) is the student government organization representing students in the Graduate School (and all schools and colleges included under the Graduate School). Established in 1969, the GSA is one of the oldest graduate student governments in the United States. The primary function of the GSA is to provide the means for responsible and effective graduate student participation in the planning and conduct of University affairs. The GSA serves as a liaison between graduate students, individually and collectively, the faculty and the administration. In addition, the GSA exists as a social and intellectual forum to support and improve the quality of the graduate student environment at the University of Miami.

The Graduate Student Association is made up of seven officers and nearly fifty full- and part-time senators; the role of the GSA is both supervisory and implementary, and its scope encompasses both academic and social interests of the University's graduate student body. Officers and Senators meet regularly to discuss important issues and are often required to attend University-wide meetings with faculty, staff, administration and fellow students. The Graduate Student Senate is the primary body that represents the interests and concerns of the entire graduate student body at the University of Miami. The Senate is made up of one representative from every graduate department or program (currently there are 46 recognized graduate programs) at the University of Miami. The Senate coordinates most of the graduate activities and programs that the GSA sponsors, and acts as a hub for the exchange of information between different departments and programs. Typically, senators are either elected or appointed by their peers or program directors and serve for a one-year term. Each senator has one vote in the senate. Throughout the semester, the senate can issue directives, bills and resolutions pertaining to any aspect of graduate student life at the University of Miami, and works extremely closely with the Dean of the Graduate School in effecting changes and/or improvements.

The Senate, also as part of its charge, decides on and elects the new Executive Board of the Graduate Student Association each spring semester. Alternates are also elected or appointed to assist the senator when they are unable to carry out their duties.

The office of the GSA is located at Suite 21-T, 5606 Merrick Drive, please call 305-284-6750, e-mail: gsa@miami.edu, or visit our website at www.miami.edu/gsa for more information.

GRADUATE ACTIVITY FEE ALLOCATION COMMITTEE (GAFAC)

The unallocated portion of the graduate activity fee produces an annual fund that is available for graduate students to seek for enrichment of their various activities. The monies are allotted by a graduate student committee composed of nine elected representatives from Architecture, Arts and Sciences, Business, Communication, Education, Engineering, International Studies, Music and Nursing; and the Treasurer of the Graduate Student Association.

Petitions for funds are judged on the merits of the individual requests, the anticipated direct or indirect benefit to the University, the effort of the petitioners to generate support from other areas, past experience with the petitioning group, if applicable, and the current amount of funds available.

Forms for petitions are available in the Office of the Vice President for Student Affairs, Room 244, Ashe Building.
THE GRADUATE BUSINESS STUDENT ASSOCIATION

The Graduate Business Student Association (GBSA) is a professional and social student-run organization. All graduate business students become members once enrolled in a business master's program and are encouraged to attend meetings and events. The GBSA organizes activities and events aimed at strengthening networking within the graduate business student body and the business community and enriching the academic and social experience of its members. The GBSA is governed by a committee that consists of a president, vice president, speaker of senate, treasurer/executive secretary, director of community service, social director, and director of athletics. Elections take place at the end of each spring semester.

FINANCIAL ASSISTANCE

GRADUATE BUSINESS SCHOLARSHIPS AND FELLOWSHIPS

There are a limited number of merit-based graduate business scholarships which are awarded at the time of admission to qualified full-time MBA students entering in the fall semester only. A graduate business scholarship covers a portion of tuition for the MBA degree. Graduate business scholarships are not automatically renewed.

In addition to graduate business scholarships, there are a limited number of Emery Means Findley, Jr. Fellowships and scholarships which are awarded by Graduate Business Programs to applicants with outstanding academic credentials. Any applicant who wishes to be considered for a graduate business scholarship or a fellowship, must indicate this in the space provided on the application. Awards are available to both domestic and international students.

There are a limited number of merit/need-based scholarships which are awarded following admission for Executive and Working Professionals programs. Details on how to apply for these scholarships are provided at the time of admission.

DONOR SCHOLARSHIPS

Several endowed scholarships are made available to incoming graduate business students through the generosity of alumni and friends of the University of Miami School of Business Administration. These donor scholarships are for the purpose of recruiting students of high academic merit. The total number and amount of scholarship awards vary from year to year.

Scholarships will be awarded based on the recommendations of the Faculty Admissions Committee on a first come, first served basis. Since the number of scholarships is limited, students who meet the minimum criteria are not guaranteed a donor scholarship award.

We regret that a student may be ineligible for financial awards if he/she receives tuition benefits from the University of Miami or accepts any assistantship, scholarship, grant or fellowship from the University of Miami, in addition to our offer. This includes employees, their spouses, and dependents.
BANK OF AMERICA - ENDOWED BUSINESS SCHOLARSHIPS*
Criteria: A graduate business school student based on a combination of scholarship and financial need, who will preferably specialize in Finance, Accounting, or Management.

JACK R. BORSTING - GRADUATE SCHOLARSHIP ENDOWMENT
Criteria: Outstanding candidate for a master's level business degree.

RYDER/PATRICK J. CESARANO – ENDOWED SCHOLARSHIP*
Criteria: MBA student with a concentration in finance or management science/operations research. Based on academic excellence and financial need.

PAT & LON WORTH CROW - SCHOLARSHIP ENDOWMENT*
Criteria: Graduate business student specializing in Finance, who possesses several years of work experience, preferably with an expressed interest in a career in banking or a banking-related field. U.S. citizen, preferably resident in South Florida community.

EMERY MEANS FINDLEY, JR. – ENDOWED GRADUATE FELLOWSHIPS IN BUSINESS
Criteria: Outstanding candidates for Graduate Business Programs.

ALBERT AND ESTHER GREEN ENDOWED SCHOLARSHIP
Criteria: Graduate Business Student with a health challenge, or student studying or working in Health Administration.

ALLAN M. HERBERT & PATRICIA M. HERBERT – ENDOWED GRADUATE BUSINESS SCHOLARSHIP*
Criteria: Outstanding graduate business student, well-rounded, willing to finance his/her own education, and who appreciates the value of work and strives to combine study, work and extra-curricular activities.

JAMES W. McLAMORE – GRADUATE BUSINESS FELLOWSHIPS
Criteria: To recruit and retain outstanding graduate business students.

E. BRUCE MCLAUGHLIN & CYNTHIA M. SWOL - ENDOWED SCHOLARSHIP IN MARKETING*
Criteria: Graduate business student with concentration in Marketing, who has significant work experience prior to entering the MBA program. U. S. citizen, with preference given to female students with unmet financial need.

MERRILL LYNCH & CO. FOUNDATION, INC. – FELLOWSHIPS IN INTERNATIONAL FINANCE
Criteria: Graduate business student preparing for a career in International Finance.

SOUTHEAST BANKING CORPORATION FOUNDATION – ENDOWED SCHOLARSHIPS*
Criteria: Graduate student in the MBA program who is a Florida resident. Based on academic excellence and financial need.

* Essay Required
In 300 words or less, please explain why you need financial assistance to complete your MBA degree. The essay must be included with your application.

Various other donor scholarships are available based upon need, merit, or other specified criteria.

**ZIFF GRADUATE CAREER SERVICES CENTER**

A. The Ziff Graduate Career Services Center's mission is to provide top quality resources and career guidance to School of Business graduate students and build strong partner relationships with the corporate community.

1. The Ziff Career Services Team is committed to providing each student a personalized program and the resources and skills needed to be competitive in the marketplace.

2. The Ziff Career Services Team is the student’s frontline resource to securing employment upon graduation. Students who engage with the Ziff Graduate Career Services Center will utilize the staff to assist them in developing an effective career strategy and marketing campaign that will prepare them for a successful job search at all levels of their career. The marketing campaign will equip the student with a strategic résumé, improve their interview skills, generate contacts, develop networking opportunities, and prepare them for a successful career transition.

B. **ONLINE RESOURCES**

1. Ziffecareercenter.com – The center’s online portal where students find access to many of Ziff’s career resources, access to all current job postings and upcoming events. Documents such as résumés and cover letters will be held in the student’s site.

2. CareerLeader – An assessment tool specifically developed for MBA students that provide expert analysis of a student’s unique pattern of business relevant interests, values and abilities.

3. Careershift - A tool that provides the student access to thousands of national contacts based on company, alumni affiliation, location and creates targeted contact lists. One-stop location to conduct national and local job search for both full-time and internship opportunities.

4. Vault’s Career Insider – Provides inside information and advice on industries, companies, the job search and industry interview prep.

5. GoingGlobal – the leading provider of both country-specific and USA city-specific career and employment information. Features 30 Country Career Guides, 41 USA City Career guides, corporate profiles and more than 500,000 internship and job listings within the USA and around the world.

6. H1Base – A resource to assist international students in finding out which employers have H1 job postings, which companies have sponsored international students in the past and access to important information on the sponsorship process.
7. Myvisajobs.com - Current job listings and information on companies that hire international students.

C. REGISTRATION
1. Graduate business students that are seeking employment post-graduation are required to register with the Ziff Graduate Career Center to commence their Career Management Plan.

2. The registration process begins with the Pre-MBA OnBoarding Program. Students are required to complete key assignments prior to Orientation.

D. ON CAMPUS INTERVIEWS/CORPORATE RECRUITING
The recruiting program begins in the fall semester from mid-September through mid-December and continues from mid-January through May.

   Ziff Graduate Career Center has established recruiting relationships with many local and national companies to increase exposure for University of Miami School of Business Administration MBA graduates.

   MBA students can utilize the Ziff Graduate Career Services Center’s Internet Employment system, www.ziffecareercenter.com to sign up for on-campus interviews, monitor corporate presentation schedules, upload résumés and cover letters, and stay abreast of job opportunities offered by companies that are recruiting on campus.

   The Ziff Graduate Career Center regularly receives career opportunities that are made available through www.ziffecareercenter.com to students and alumni alike so they can review career opportunities listed with the center.

E. INTERNSHIPS
1. The School of Business Administration encourages students to augment their classroom experience through participation in a summer internship.

2. The internship is a key positioning element for the post-MBA career. The internship search should be the student’s main focus from the start of the first year.

F. NETWORKING CONTACTS
1. 'Cane Connections is an online University of Miami database that allows students access to alumni throughout the United States about their work experiences and gather other career related information. The database is a valuable network of contacts in a variety of fields. It is accessible through www.miamialumni.net.

2. Students are invited to join the School of Business MBA groups on LinkedIn and Facebook, an easy way to reach out to more contacts and build their network.
G. STUDENT RESPONSIBILITY

1. Ultimately, success in securing a job is defined by the student. Together with the Ziff Graduate Career Center as a partner, the student can create a successful marketing campaign that will connect him/her to a network of contacts and networking opportunities leading to interviews and job offers.

2. Students are to register online with the Ziff Graduate Career Center during the Pre-MBA OnBoarding cycle. All pre-MBA assignments need to be completed prior to Orientation.

3. Students are to meet with a career advisor in term one to discuss their career goals and develop a personalized career action plan/marketing campaign that will lay out the strategy and timing sequence of their goals. The career action plan and strategy will be built through numerous advising appointments and workshop events.

4. Students must regularly update and revisit their résumés in an ongoing résumé review process.

5. Students will participate in mock interviews and follow through with suggestions until they are declared ready to interview.

6. Students are expected to visit the Ziff Graduate Career Center regularly and access www.ziffecareercenter.com to identify and attend on-campus recruiting activities, corporate presentations, relevant workshops and MBA clubs sponsored events.

7. Students MUST complete the exit survey and report their employment information as soon as they secure a job or internship.

The Ziff Graduate Career Services Center is located in the School of Business complex on the first floor of the Jenkins Building.

THE MENTOR PROGRAM

1. The School of Business Mentor Program is designed to enhance the classroom experience by matching students with local professionals who have experience and expertise in the students’ area of career interest, or are versed in areas of professional development.

2. Through personal interaction with experienced business professionals, students gain an understanding of corporate culture, career directions, and networking. Students also have the opportunity to interact with other mentors by attending regularly scheduled roundtables, hosted by the School.

3. Graduate business students are encouraged to participate.

ACCOUNTING - Dept. Code: ACC

DEGREE PROGRAMS

The Department of Accounting offers two degree programs leading to the Master's degree:

Master of Accounting (MAcc) and
Master of Science in Taxation (MST).

While the programs are similar in that they offer an opportunity to concentrate in accounting, they differ in degree of specialization and career path orientation. The MAcc offers two separate tracks in assurance and corporate accounting while the MST is designed for students interested in careers in taxation.

For admission to either program, based on an undergraduate degree from an accredited U.S. institution, we consider the applicant’s undergraduate grade point average, GMAT score, grades in specific accounting courses, the rigor of the undergraduate program, and other factors such as work experience. Admission decisions are made on a competitive basis from the applicant pool. Undergraduate students from the University of Miami that have a grade point average of 3.4 or higher do not have to take the GMAT exam. In addition individuals who have demonstrated their ability to do graduate work in accounting by becoming a CPA or who have earned a graduate degree from a business school accredited by the AACSB are also waved from the requirement to take the GMAT exam.

Students without an undergraduate degree in accounting will be required to take certain prerequisite courses to secure admission. These prerequisites will depend upon the undergraduate major and previous accounting courses taken. Necessary prerequisite accounting courses can be taken in the University of Miami Accounting Summer Intensive Program, which is a seven-week program beginning in early July.

Foreign students must provide evidence of proficiency in English by supplying a TOEFL score.

Additionally, foreign students must have successfully completed two semesters of intermediate accounting, one semester of cost accounting, one semester of auditing, one semester of accounting systems and one semester of tax at a U.S. university accredited by the AACSB before enrolling in graduate accounting courses. Alternatively, foreign students may attend the University of Miami Accounting Summer Intensive Program to fulfill this requirement.

SCHOLARSHIPS

University of Miami School of Business - Alumni Association Endowed Accounting Scholarships are available for students pursuing Graduate Studies in Accounting. Various other scholarships and assistantships may be available. An application may be obtained from the Department’s website.
MASTER OF ACCOUNTING (MACC)

The MAcc program offers two tracks: Assurance (MAcc-Assurance) for students planning to go into public accounting and Corporate Accounting (MAcc-Corporate) for students planning careers as controllers, CFOs or financial analysts. In addition to the traditional one year of full-time study beyond the Bachelor’s level, the MAcc and the MST programs are offered as accelerated programs for UM undergraduates. Students in the accelerated programs have the option of obtaining an International Designation.

The MAcc is designed for the student who has taken the accounting and related courses required for an undergraduate major in accounting or other undergraduate business majors who have successfully completed the Accounting Summer Intensive Program. These students should be able to complete the MAcc in a year or less provided they enroll as full time students.

Undergraduate Course Requirements

The courses listed below are undergraduate prerequisites that, unless already completed, must be fulfilled in order to be admitted for graduate study. For most graduate tax classes the equivalent of ACC 404: Advanced Taxation (Corporate and Partnership Income Taxation) is also required. If a candidate does not have an undergraduate business degree, additional business prerequisites (economics, marketing, management, finance and others) will also be required.

Principles of Financial Accounting (ACC 211)
Managerial Accounting (ACC 212)
Intermediate Financial Accounting I and II (ACC 311 and 312)
Cost/Managerial Accounting (ACC 301)
Auditing (ACC 402)
Fundamentals of Taxation (ACC 403)
Accounting Information Systems (ACC 406)

Master of Accounting—Assurance Track (MAcc-Assurance)

The program requires 30 semester hours consisting of five required courses and the balance of approved elective courses provided the student has an undergraduate degree in Accounting, or its equivalent, from an accredited institution. Of the elective courses, at least four credits must be selected from electives with an accounting emphasis (refer to list below). Courses with a 600-level designation are open to graduate students and upper-level undergraduate students. Graduate students are permitted to take up to 6 semester hours in 500-level courses. The remaining credits must all be earned in 600-level courses.

Required courses:
ACC 530 International Financial Reporting Standards (1 credit)
ACC 603 Studies in Financial Reporting Issues
ACC 610 Accounting Research and Theory
ACC 611 Auditing Seminar

In addition to the above courses, a student must select one of the following courses:
ACC 602 Analysis of Financial Statements
ACC 672 Advanced Financial Analysis
In addition to the above courses, a student must take at least two credits from the following accounting courses:

ACC 522 Advanced Issues in Auditing  
ACC 524 Accounting for Governmental and Not-for-Profit Entities  
ACC 620 Accounting Controls in Information Technology  
ACC 623 International Accounting and Taxation  
ACC 648 Financial Reporting Implications of Income Taxes  
ACC 675 Compensation, Incentives and Strategic Control  
ACC 677 Forensic Accounting

Students may select their other electives from courses above or the following courses:

Recommended elective courses:
BUS 602 Critical Thinking and Effective Writing (1 credit)  
BUS 603 Critical Thinking and Effective Presentations (1 credit)

Other elective courses:
ACC 640 Corporate Taxation I  
ACC 641 Corporate Taxation II  
ACC 642 Seminar in Taxation  
ACC 643 Tax Research  
ACC 645 Partnership Taxation  
ACC 647 Estate and Gift Taxes  
ACC 649 Issues in Tax Policy  
ACC 662 Taxation of Multinational Corporations  
ACC 677 Forensic Accounting  
BSL 691 The Public Corporation

Any other electives must be selected in consultation with the Program Director.

**Master of Accounting—Corporate Accounting Track (MAcc-Corporate)**

The program requires 30 semester hours consisting of five required courses and the balance of approved elective courses provided the student has an undergraduate degree in Accounting, or its equivalent, from an accredited institution. Of the elective courses, at least two credits must be selected from electives with an accounting/finance emphasis (refer to list below). Courses with a 600-level designation are designed for graduate students. Courses with a 500-level designation are open to graduate students and upper-level undergraduate students. Graduate students are permitted to take up to 6 semester hours in 500-level courses. The remaining credits must all be earned in 600-level courses.

Required courses:
ACC 530 International Financial Reporting Standards (1 credit)  
ACC 603 Studies in Financial Reporting Issues  
ACC 675 Compensation, Incentives and Strategic Control  
FIN 670 Corporate Finance

In addition to the above courses, a student must select one of the following two courses:
ACC 602 Analysis of Financial Statements  
ACC 672 Advanced Financial Analysis
In addition to the above courses, a student must take at least one course from the following accounting or finance courses:

ACC 610  Accounting Research and Theory
ACC 677  Forensic Accounting
FIN 650  Financial Investment
FIN 651  Advanced Topics in Investments
FIN 660  International Finance
FIN 671  Advanced Topics in Corporate Finance
FIN 685  Mathematics of Financial Derivatives

Students may select their other electives from courses above or the following courses:

Recommended elective courses:
BUS 602  Critical Thinking and Effective Writing (1 credit)
BUS 603  Critical Thinking and Effective Presentations (1 credit)

Other elective courses:
ACC 522  Advanced Issues in Auditing
ACC 524  Accounting for Governmental and Not-for-Profit Entities
ACC 601  Trends in Present Day Accounting
ACC 606  Internal Auditing
ACC 611  Auditing Seminar
ACC 620  Accounting Controls in Information Technology
ACC 623  International Accounting and Taxation
ACC 640  Corporate Tax I
ACC 641  Corporate Tax II
ACC 642  Seminar in Taxation
ACC 643  Tax Research
ACC 647  Estate and Gift Taxes
ACC 648  Financial Reporting Implications of Income Taxes
ACC 649  Issues in Tax Policy
ACC 662  Taxation of Multinational Corporations
BSL 691  The Public Corporation

Any other electives must be selected in consultation with the Program Director.

MASTER OF SCIENCE IN TAXATION (MST)

This program affords the accounting major or equivalent the opportunity to specialize in the area of taxation. Through electives, students are able to expand their areas of expertise, so that they may adequately prepare themselves for careers requiring a high degree of specialized tax knowledge in public accounting, private industry, and government. The program requires 30 semester hours consisting of six required courses and the balance of approved elective courses provided the student has an undergraduate degree in Accounting, or its equivalent, from an accredited institution and has completed ACC403: Fundamentals of Taxation and ACC404: Advanced Taxation, or their equivalents. Of the elective courses, at least two courses must be selected from electives with a tax emphasis (refer to list below). Courses with a 600-level designation are designed for graduate students. Courses with a 500-level designation are open to graduate students and upper-level undergraduate students. Graduate students are permitted to take up to 6 semester hours in 500-level courses. The remaining credits must all be earned in 600-level courses.
Required courses:
ACC 640  Corporate Taxation I
ACC 641  Corporate Taxation II
ACC 643  Tax Research
ACC 645  Partnership Taxation
ACC 648  Financial Reporting Implications of Income Taxes

In addition to the above courses, a student must select at least one of the following courses:
ACC 623  International Accounting and Taxation
ACC 649  Issues in Tax Policy
ACC 662  Taxation of Multinational Corporations

Students may select their other electives from courses above or the following courses:

Recommended elective courses:
BUS 602  Critical Thinking and Effective Writing (1 credit)
BUS 603  Critical Thinking and Effective Presentations (1 credit)

Other elective courses:
ACC 522  Advanced Issues in Auditing
ACC 524  Accounting for Governmental and Not-for-Profit Entities
ACC 530  International Financial Reporting Standards (1 credit)
ACC 601  Trends in Present Day Accounting
ACC 602  Analysis of Financial Statements*
ACC 603  Studies in Financial Reporting Issues
ACC 606  Internal Auditing
ACC 610  Accounting Research and Theory
ACC 611  Auditing Seminar
ACC 620  Accounting Controls in Information Technology
ACC 642  Seminar in Taxation
ACC 647  Estate and Gift Taxes
ACC 672  Advanced Financial Analysis and Valuation**
ACC 675  Compensation, Incentives and Strategic Control
ACC 677  Forensic Accounting
BSL 691  The Public Corporation

*Not open to students who have taken ACC 672
**Not open to students who have taken ACC 602 Any other electives must be selected in consultation with the Program Director.

ACCELERATED MASTER’S PROGRAMS

In addition to offering the Master of Accounting (MAcc) and Master of Science in Taxation (MST) on the usual time frame involving one year of full-time study beyond the Bachelor’s level, the MAcc-Assurance Track, MAcc-Corporate Track, and MST are offered as accelerated programs. These programs permit high achieving accounting students who have accelerated their education by taking advanced courses in high school, testing out of classes, taking increased class loads, or going to summer school, to start their graduate work while seniors. The accelerated programs are available only to students who are undergraduate students at the University of Miami. The programs are designed in such a way that students can expect to complete both their Bachelor’s and Master’s degrees and make significant progress on the CPA exam (if not complete it entirely) within 4½ years. In addition, these programs are extremely price competitive.
Accelerated Program Timeline

1. Internship in summer after junior year

2. Twelve credits of work in senior year will count towards their graduate degree (only students in the accelerated programs will be permitted to take these classes during their senior year).

3. In summer after senior year take one graduate course, CPA review course, and CPA exam.

4. Complete remaining credits of graduate work in fall semester after senior year.

Prerequisites

The following must be completed before students begin their senior year:

- A minimum of 102 credit hours
- 15 credit hours of the 21-hour Professional Business Core including CIS 410, ECO 302, FIN 302, MGT 303, and MGT 304. (MGT 401 must be taken in the final semester and FIN 303 will be taken as the core elective in the senior year.)
- The following Accounting major requirements: ACC 301, ACC 311, ACC 312, ACC 402 ACC 403, and BSL 301.
- All other requirements for a Bachelor’s degree other than those that will be satisfied through completion of the undergraduate courses taken while in senior-graduate status.

Senior Year Curriculum (Senior-Graduate Status)

The curriculum for the senior year is the same for all tracks (except that students selecting the MAcc-Corporate track must complete FIN 303 in order to take the graduate finance courses required for the track) and consists of 14 credits in the fall and 16 credits in the spring semester as follows:

Fall Semester Senior Year

Recommended Sequence:
ACC 404 Advanced Taxation (3 credits)
ACC 406 Accounting Systems (3 credits)
FIN 303 Intermediate Financial Management (3 credits)

Courses offered only in the fall:
ACC 524 Accounting for Governmental and Not-for-profit Entities (2 credits)
ACC 530 International Financial Reporting Standards (1 credit)
BSL 691 The Public Corporation (2 credits)

Spring Semester Senior Year

Recommended Sequence:
ACC 411 Advanced Accounting (3 credits)
MGT 401 Strategic Management (3 credits)
One other non-accounting undergraduate course (3 credits)
Courses offered only in the spring:
ACC 643 Tax Research (2 credits)
ACC 522 Advanced Issues in Auditing (3 credits)
BUS 602 Critical Thinking and Effective Writing (1 credit)
BUS 603 Critical Thinking and Effective Presentations (1 credit)

Students should select their track (MAcc-Assurance, MAcc-Corporate, or MST) by the spring semester of their senior year before registering for their final fall graduate classes.

**Summer after Senior Year**

Students must take one 2 or 3-credit accounting graduate course. Accounting courses are offered based on demand and could include ACC 620, Accounting Controls in IT (offered every summer) or ACC 649: Issues in Tax Policy.

To graduate on time you are **REQUIRED** to take an approved CPA review course during the summer following your senior year after you graduate. If you do not take a CPA review course you will have to register and pay for an addition six graduate credits in the next spring semester and you will graduate from graduate school a semester late, in May instead of December.

Students would also be expected to pass part, if not all of the CPA exam during this summer.

**Final Fall Semester**

In the final fall semester students will complete the remaining 15 or 16 graduate credits including the requirements for their track and electives selected in consultation with the Program Director.

**Admission to the Accelerated Programs**

**Incoming Freshmen**
- Prospective students apply to the accelerated program when they apply for admission to the University of Miami.
- SAT scores should meet or exceed 1400; high school unweighted GPA should meet or exceed 3.75.
- Students are required to have an overall and accounting GPA of 3.0 or higher by their junior year in college and to maintain this GPA after their junior year.
- Students will need to have completed 102 credit hours by the start of their senior year.

**Current University of Miami Undergraduate Accounting Majors**
- Students apply to the accelerated program by February 1 of their junior year.
- Admission to the program will be primarily based on GPA, and letters of recommendation. It is expected that the students admitted to the program will have GPAs exceeding 3.5, but students with these scores are not guaranteed admission. The decision will depend on the quality and size of the application pool.
- After admission, students must maintain an overall GPA of 3.0 or higher and an accounting GPA of 3.0 or higher to remain eligible.
- Students will need to have completed 102 credit hours by the start of their senior year including ACC 301, ACC 311, ACC 312, ACC 402, ACC 403, and BSL 301.
International Designation Requirements

Admission to this accelerated program is expected to be more competitive given the small number of international internships that will be available.

Incoming Freshman Admission Requirements

Applicants must meet the freshman admission requirements of the accelerated program as well as:
- Applicants must meet the freshman admission requirements of the accelerated program
- Maintain an overall GPA of 3.00 or higher and an accounting GPA of 3.25 or higher
- Demonstrate proficiency in a second language.

Current University of Miami Undergraduate Accounting Major Admission Requirements

Applicants must meet accelerated program admission requirements:
- Have an overall and accounting GPA of 3.5 or higher, and
- Demonstrate proficiency in a second language,

Educational Requirements to Sit for The CPA Exam

Most of our students intend to become qualified as Certified Public Accountants (CPA). While the CPA exam is a national exam administered by the American Institute of Certified Public Accountants, its execution and licensing practices are governed by state law. For example, some states require a certain number of credit hours in particular subjects and have overall accounting and business credit hour requirements. As such, you should check with the state in which you intend to practice to determine what the specific course requirements are for that state. Note, our department is unable to make a determination of your eligibility to sit for the CPA exam. This can only be done by the appropriate state board. The licensure requirements for the State of Florida can be viewed at:  
http://www.myfloridalicense.com/dbpr/cpa/licensure.html

For your convenience, the Florida rules that apply to most individuals are summarized here. Please check the State of Florida Web site noted above for updates and rules which may apply in particular circumstances.

As of July 1, 2008 the Florida State Board of Accountancy (BOA) separated the requirements to become a Certified Public Accountant (CPA) into two parts: (1) the requirements to be eligible to take the CPA exam and (2) the requirements for licensure to practice as a CPA in Florida.

Requirements to Sit for the CPA Exam: To be eligible to take the CPA exam, you must have completed 120 semester hours including 24 semester hours of accounting (auditing, cost and managerial accounting, financial accounting, accounting information systems, and taxation) at the upper division level (300-level or above) and 24 semester hours in general business courses (including at least 6 semester hours of business law courses). One course can be at a lower lever (freshman or sophomore), the other course must be upper division (junior level or higher). The exam is offered in the following time periods; January – February, April – May, July – August and October – November. Note you do not have to have a bachelor’s degree in order to sit for the CPA exam.
Requirements for Licensure: In addition to passing all four parts of the CPA exam with at least a 75% within 18 month rolling period, the BOA requires that you have completed a bachelor's degree plus an additional 30 hours for a total of 150 semester hours before you can become licensed as a CPA. One year of work experience under the supervision of a licensed CPA is now also required to become licensed. (This experience may be obtained before or after sitting for the exam, however, all requirements to sit for the exam must be met before the work experience commences.) If you fail to apply for licensure within three years of receiving the licensure package, (sent after you pass all four parts) the CPA grades expire and you have to retake the examination.

The 150 semester hours must include a minimum of 36 semester hours of accounting courses and at least 39 semester hours of general business courses. Excess upper division accounting courses may be used to meet the general business requirement. Courses for non-accounting majors and any MBA courses that are equivalent to elementary accounting are not accepted for this requirement.

Licensed in Another State: If you are licensed in a state other than Florida you can obtain a license in Florida by a process called endorsement. You must provide evidence of meeting all of the requirements in effect at the time of your application. In addition if you passed the exam more than two years before applying you must provide evidence of meeting continuing professional education requirements.

Accreditation

The Board accepts degrees from schools accredited by the following associations: Middle States Association, New England Association, North Central Association, Northwest Association, Southern Association of Colleges and Schools, Western Association of Schools and Colleges, Association of Independent Schools and Colleges who have been approved by the Florida State Board of Independent Colleges and Universities, and Canadian Schools who have been approved by their provincial educational bodies. If you have graduated from a school or college which is not accredited by the above mentioned means, then you must use the provisions of F.A.C. 61H1-27.001 (5) (see below).

Applicants Who Have Graduated from Non-Accredited Schools (61H1-27.001) (5)

Applicants who have graduated from a non-accredited school may still qualify to sit for the CPA examination. The candidate must take 15 semester hours of graduate classes. Those must consist of at least nine hours of graduate level accounting courses including a minimum of three semester hours of graduate tax. THESE HOURS MUST BE TAKEN AFTER ADMISSION TO GRADUATE SCHOOL. If the courses are taken before admission to a graduate program, the classes will not be accepted, even if the school includes them as part of the graduate program. These courses cannot duplicate other courses which the applicant has taken and they cannot be used to accredit the non-accredited degree and satisfy the educational requirements. The applicant must complete the graduate school courses to validate the non-accredited degree. The applicant must also meet all other requirements for endorsement or transfer of credit. An evaluation of foreign transcripts must be completed by an evaluation service which has been approved by the Board (see Board Approval Evaluation Services).

Duplicate Courses

No credit will be given for courses which duplicate another course for which the applicant has received credit. Review courses are considered as duplicates.
For the CPA requirements in other states, you should consult the State Board of Accountancy for your state.

Accounting Course Listing
BUSINESS LAW - Dept. Code:  BSL

The Department of Business Law does not offer a graduate degree program.

Business Law Course Listing

COMPUTER INFORMATION SYSTEMS - Dept. Code:  CIS

MASTER OF SCIENCE IN COMPUTER INFORMATION SYSTEMS (CIS)

The CIS department is not admitting students into the Master of Science degree program at this time. Anyone who is interested in the Information Systems / Information Technology area, within the School of Business, could pursue an MBA degree with a concentration in CIS.

Computer Information Systems Course Listing
ECONOMICS - Dept. Code: ECO

DEGREE PROGRAMS

The Department of Economics offers the Master of Arts and Doctor of Philosophy (refer to School of Business Doctor of Philosophy section for program specifics) degrees. Applicants for admission to graduate study in Economics should have an extensive background in Economic Theory and Quantitative methods.

The Master of Arts program may serve as a terminal degree for students preparing for careers in business, government, international agencies, or teaching, or as the first phase of a prospective doctoral program. The program of study, which consists of thirty credits, is structured as follows:

a. All Master of Arts students must take the following core that consists of the following courses:
   i. a 500-level mathematical economics course (ECO 510)
   ii. a 500-level econometrics course (ECO 520)
   iii. a 500-level macroeconomics course (ECO 521)
   iv. a 500-level microeconomics course (ECO 533)
   v. a 600-level macroeconomics course (ECO 621)
   vi. a 600-level microeconomics course (ECO 633)
   vii. a 500 level mathematics course (MTH 512)
   viii. 600 level econometrics (ECO 620)

b. Additional requirements are as follows:
   i. two courses in an area of specialization in a major economic discipline (e.g., international trade) or two related disciplines (e.g., health economics and labor economics)
   ii. comprehensive examinations over the core and area of specialization

c. Furthermore, all applicants must submit their scores on the GRE, hold a baccalaureate degree from an institution of recognized standing, and have demonstrated, by their undergraduate record, capability of completing an M.A. program. In addition, foreign students are required to score 90 on the internet based, 600 on the paper based, or 235 computer based Test of English as a Foreign Language.

Economics Course Listing
EXECUTIVE AND SPECIAL PROGRAMS - Dept. Code: ESP

Executive and Special Programs Course Listing

FINANCE - Dept. Code: FIN

The Department of Finance does not offer a graduate degree program.

Finance Course Listing

MANAGEMENT - Dept. Code: MGT

The Department of Management does not offer a graduate degree program.

Management Course Listing

MANAGEMENT SCIENCE - Dept. Code: MAS

The Management Science Department is not admitting students into the Master of Science degree program at this time. Students interested in Management Science, Operations Research, or Applied Statistics within the School of Business are encouraged to pursue an MBA degree with a concentration in Management Science.

Management Science Course Listing

MARKETING - Dept. Code: MKT

The department of Marketing does not offer a graduate degree program.

Marketing Course Listing
SCHOOL OF COMMUNICATION – GRADUATE
www.com.miami.edu

DEPARTMENTS

The School of Communication offers the Master of Arts in the Department of Communication Studies (M.A. in Communication), the Department of Journalism and Media Management (M.A. in Journalism), the Department of Strategic Communication (M.A. in Public Relations) and the Master of Fine Arts in the Department of Cinema and Interactive Media (M.F.A. in Motion Pictures). The School also offers a Ph.D. in Communication.

ADMISSION REQUIREMENTS

Admission to Graduate Studies at the Master’s Level:

Requirements for admission to Graduate Studies for the Master of Arts or Master of Fine Arts degree in Communication are:

- A baccalaureate degree from an accredited institution
- The School’s official application
- A $65.00 non-refundable application fee
- Official transcripts of all undergraduate and graduate college work
- Three letters of recommendation
- Official Graduate Record Examination (GRE) scores (M.A. applicants only)
- Portfolio (M.F.A. applicants only)
- Official TOEFL scores for international applicants only
- Letter of intent--500 word typed statement of academic and professional goals

Contact the Office of Graduate Studies, 305-284-5236 or socgrad@miami.edu, for information.

Requirements for admission to Graduate Studies for the Juris Doctor/Master of Arts in Communication Joint degree are:

For Fall 2012

- Applications are due on April 1, 2012 for Fall 2012 matriculation. If students currently enrolled in the J.D. program want to apply to the School of Communication graduate program, the process will be as follows: Admitted students and current 1L students will supply a personal statement attached to an email indicating that they are applying to the joint degree program specifying one of the following three School of Communication M.A. programs: Communication Studies, Public Relations, and Journalism. This email and a personal statement should be directed to: Sandra Abraham, Executive Liaison for Interdisciplinary Programs, School of Law.
  - sabraham@law.miami.edu
  - Office: 305-284-4030
  - University of Miami, 1320 South Dixie Highway, Suite 731, Coral Gables, FL 33146.
• The Executive Liaison, working with the Admissions Office, will forward the student's application, including LSAT score, undergraduate transcript, letters of recommendation (two of them previously required for the J.D. program), and, if applicable, a current Law School transcript to the School of Communication for admission consideration.

• An LSAT score will be considered in lieu of the GRE.

• Students will be admitted to the Law School J.D. program and the School of Communication (SoC) master's program separately.

• Students in this joint degree program must commence law study first.

For Fall 2013

• Beginning in Fall 2012, students must be admitted to the Law School first, prior to enrollment in the School of Communication, checking a box on their application indicating their interest in the joint degree program. Once accepted to the Law School, the student's law school application including LSAT score, undergraduate transcript, and letters of recommendation (two of them required for the J.D. program) will be sent to the School of Communication for review. The student will then receive notification from the School of Communication regarding his/her admission to the joint degree program.

• An LSAT score may be submitted in lieu of the GRE.

General notes for Fall 2012 and Fall 2013

• Students will be admitted to the Law School J.D. program and the School of Communication (SoC) master's program separately.

• Students in this joint degree program must commence law study first. (Students who have already commenced work on the M.A. are not eligible for the joint program.)

Admission to Graduate Studies at the Doctoral Level:

Requirements for admission to Graduate Studies for the Doctor of Philosophy in Communication are:

• A master's degree in communication, or in another appropriate field. The degree must be in addition to a bachelor's degree. All degrees must be from accredited institutions.

• The School's official application

• A $65.00 non-refundable application fee

• Official transcripts of all undergraduate and graduate college work

• Three letters of recommendation

• Official Graduate Record Examination (GRE) scores

• Official TOEFL scores for international applicants only

• Letter of intent – a minimum 500 word typed statement of academic and professional goals

• A copy of the completed master's thesis or comparable scholarly work if no master's thesis has been completed. If the master's thesis is in progress, completed chapters should be submitted.

• Resume
DEGREE PROGRAMS

The School of Communication offers graduate programs leading to the Doctor of Philosophy, Master of Arts and Master of Fine Arts degrees.

COMMUNICATION (Ph.D.) is a highly individualized and innovative program. Each student is paired after his/her first year of study with a faculty member who assists the student in developing the requisite research techniques, teaching, writing, and media skills necessary for a career in education, media, business, or industry.

Research interests of the School of Communication faculty are diverse. Possible areas of specialization for doctoral work include intercultural communication, health communication, organizational communication, international communication, political communication, interpersonal communication, public relations, and mass communication.

COMMUNICATION STUDIES (M.A.) is a program designed to provide students with a rigorous educational experience, to develop an advanced understanding of the human communication process, to increase awareness of the interdisciplinary nature of the communication field, and to develop oral, written, critical thinking, and research skills. The 30-credit thesis track program emphasizes the student’s development of research skills. The 36-credit non-thesis track program focuses on a theoretical foundation with emphasis on applied communication. Students have the option to concentrate in Communication Studies, Health Communication, or Intercultural Communication.

JOURNALISM (M.A.) is an intensive program of academic study and hands-on practice designed to develop competitive, high-level, cross-platform digital media skills appropriate for today’s media landscape. Students take a common core of courses designed to provide a foundation in all aspects of contemporary journalism (e.g., writing, reporting, multimedia, data visualization, broadcasting, media law and ethics). In addition, students have the opportunity to focus their work in various areas of study, including broadcast journalism, news and feature writing and various aspects of multimedia journalism. Through a combination of journalism courses and related courses offered by other programs, students may also concentrate some of their work in particular areas of interest (e.g., sports reporting, journalism for social change or international journalism). The program begins in the fall semester and lasts for 18 months. No prior training or experience in journalism is required.

PUBLIC RELATIONS (M.A.) offers two programs. The 30-credit thesis track program provides an opportunity to supplement a working foundation and knowledge with pertinent theory and research methodologies. A second non-thesis track program, a 36-credit coursework-only option, builds from a foundation of public relations and communication courses.

JOINT DEGREE JURIS DOCTOR (J.D.)/M.A. IN COMMUNICATION. A powerful background in law and in communication can be a launching pad for a career in law, business, entertainment or government. For this reason, the University of Miami School of Law and School of Communication have brought together these two dynamic fields to offer a joint degree program. Through this joint program, students can acquire a law degree and a master's degree in communication in less time (3 to 3 ½ years). The joint degree program is intended for students with a variety of goals including students who plan to practice professionally in a communication field such as journalism or strategic communication with a law-related emphasis. Graduates of these programs may also
work as in-house counsel for new communication technology companies, or serve with
government agencies concerned with communication law or with law firms practicing in
that field. This program also provides a solid foundation for future journalists who wish
to report on legal affairs, and offers ideal preparation for the rapidly growing field of
public affairs management, in which practitioners work in business, government and
non-profits to communicate with key audiences.

The School of Communication M.A. degree programs participating in the joint J.D.
program are:

- Communication Studies (Communication Studies, Health Communication,
  Intercultural Communication)
- Public Relations
- Journalism

**MOTION PICTURES (M.F.A.)** The Motion Picture graduate program provides a student-
centered, learning experience within a globally diverse moving image context. The M.F.A.
curriculum emphasizes the relationship between theory and practice and encourages
both creative collaboration and independent thinking as it prepares motion picture
professionals and artists. M.F.A. candidates are expected to follow a set sequence of
courses during the first two semesters of their studies. During the second year of
studies, candidates are strongly encouraged to explore not only a primary but also a
secondary area of specialization in the program and develop a minimum of two creative
projects consistent with their areas of primary interest and secondary specialization. A
minimum of 6 credit hours in each area of specialization is required. Under faculty
committee supervision, students will develop one or two creative projects in the third
year of their studies. This three-year program culminates with a thesis portfolio that
demonstrates, not only skillful execution of craft, but strong conceptual development
rooted in collaborative work and innovative uses of technology.

Graduate students are encouraged to pursue independent and critical thinking, research
and creative work as appropriate to the fulfillment of the requirements of their degree.
In addition, the graduate program seeks to support innovative approaches and ideas and
to aid in the pursuit of relevant scholarly and creative endeavors.

**DEGREE REQUIREMENTS**

Programs of study for the Master of Arts and Master of Fine Arts degrees are available with
these options:

**MASTER OF ARTS - THESIS TRACK**

For programs including a thesis, the candidate must complete a minimum of 30 credit
hours at the graduate level with the approval of a faculty advisor. Of the 30 credit hours,
15 credit hours must be at or above the 600 level. Six credit hours will be earned for
thesis work. The thesis may represent an applied research project, original research, or
a critical review on a topic approved by a thesis committee. The thesis committee chair
must be a member of the Graduate Faculty of the University.

A thesis is required for thesis-track Communication Studies and Public Relations
students.
MASTER OF ARTS - NON-THESIS TRACK

Students must complete a minimum of 36 credit hours at the graduate level with the approval of a faculty advisor. Of the 36 credit hours, all must be at or above the 500 level, and 15 must be at or above the 600 level.

JURIS DOCTOR/MASTER OF ARTS JOINT DEGREE

This joint degree program will allow 9 J.D. credits to be applied to the M.A. degree and 6 M.A. credits to be applied to the J.D. degree, saving the student 15 credits between the two programs.

In the J.D. program, students will complete 82 credits in the School of Law. Additionally, 6 credits from the School of Communication program will be applied to their Law School transcript, for a total of 88 required J.D. credits. In the M.A. program, students will complete 27 credits in the School of Communication. Additionally, 9 law school credits will be applied toward their master's degree, for a total of 36 required M.A. credits. As defined above, 15 credits will be counted toward both degrees: 6 credits from the School of Law and 9 credits from the School of Communication. During the first year of the joint program, students will be required to attend the J.D. program full-time. Students will be able to take courses in the School of Communication beginning in the fall of their 2L year. Students must complete all J.D. requirements and all M.A. requirements as defined by their programs. Participants in the joint J.D./M.A. program are not required to complete the M.A. capstone project. The thesis-track is not open to students in the J.D./M.A. joint program without specific approval of the School of Communication. Students may take Summer law courses which may reduce the length of the joint degree program by up to one semester. Students may not take more than 16 credits each semester, excluding summer sessions. Seventeen credits per semester may be taken with permission from the Associate Dean, Academic Affairs, School of Law.

MASTER OF FINE ARTS

Students must complete a minimum of 66 credit hours with the approval of the faculty advisor. Of the 66 credit hours, at least 24 must be at or above the 600-level and 12 credit hours at the 700-level must be earned for thesis work.

GENERAL DEGREE REQUIREMENTS

1. All students in the Master of Arts (M.A.) program will complete the following core courses subject to specific requirements of each program.

a. Communication Studies and Public Relations

   COM 601 Theories of Communication

   COM 602 Methods of Communication Research and/or COM 603 Qualitative Research Methodologies

b. Journalism

   COM 605 Theories and Methods for Mass Communication Research
2. With the approval of a faculty advisor, a student may take 6 to 15 credit hours in courses outside the School of Communication.

3. Candidates in thesis programs must have their thesis proposals formally approved by their thesis committee following a personal meeting with committee members. Candidates will be given final oral examinations in defense of their thesis.

4. Final (Capstone) Projects or written comprehensive examinations are required in some M.A. programs.

It is the responsibility of the student to apply for graduation either during registration for the final semester or before the date indicated on the Graduate School calendar and the Schedule of Classes. Students who previously applied for a diploma but did not receive the degree must repeat the application procedure. Graduation is based on the following:

a. Students must complete the minimum credits required for their area of study with a minimum GPA of 3.0.

b. Course substitutions will not apply toward graduation without the written approval of the program director of the area and the director of graduate studies.

c. Students are required to have the approval of the area program director and the director of graduate studies to take courses at another University.

DEPARTMENT OF COMMUNICATION STUDIES

COMMUNICATION STUDIES (M.A.)

Communication Studies Track

The goals of the Master of Arts program in Communication Studies are to provide students with a rigorous educational experience, to develop an advanced understanding of the human communication process, to increase awareness of the interdisciplinary nature of the communication field, and to develop oral, written, critical thinking, and research skills. Students may complete coursework in persuasion, and interpersonal, intercultural, organizational, and health communication together with research methods applicable to these areas.

Two programs are offered. The thesis program emphasizes the student’s development of research skills under faculty supervision (30 credits). The non-thesis program focuses on a theoretical foundation with emphasis on applied communication (36 credits). Students will be prepared for leadership positions in public or private organizations at the national or international level, or pursue advanced degrees. Non-thesis students must complete a minimum of 36 credit hours at the graduate level with the approval of a faculty advisor or program director. Of the 36 credits, 18 credit hours must be at or above the 600 level. No more than six hours will be allowed for advanced projects and directed research (599).
REQUIRED COMMUNICATION CORE: (Thesis/Non-Thesis Programs) 9 CREDITS

COM 601  Theories of Communication (3)
COM 602  Methods of Communication Research (3)
COM 603  Qualitative Research Methodologies (3)

ELECTIVES: (Thesis Program) 15 CREDITS
(Non-Thesis Program) 27 CREDITS

Students may select elective courses within the School of Communication or the University; a maximum of six (6) credits thesis track and nine (9) credits non-thesis track may come from outside the School of Communication.

Recommended electives are:

COM 615  Social Effects of Mass Communication (3)
COM 672  Seminar in Persuasive Communication (3)
COS 545  Intercultural Communication: International Perspectives (3)
COS 546  Intercultural Communication: Domestic Perspectives (3)
COS 560  The Executive Communicator (3)
COS 591  Advanced Special Topics in Communication Studies (3)
COS 599  Advanced Projects and Directed Research (3)
COS 674  Seminar in Interpersonal Communication (3)
COS 682  Seminar in Organizational Communication (3)
COS 684  Organizational Communication Audit Procedures (3)
COS 690  Communication Studies Practicum (1-3)

THESIS COM 710  Master’s Thesis (Thesis Program) 6 CREDITS
TOTAL CREDITS (Thesis Program) = 30 CREDITS
TOTAL CREDITS (Non-Thesis Program) = 36 CREDITS

Health Communication Track

Health Communication is an emerging specialty in the field of communication. This graduate program is designed to provide a broad introduction to human communication in a healthcare context. Career opportunities in this area include public health leaders, practitioners, and researchers who design, evaluate, and disseminate health communication messages for private and governmental organizations, advertising, public relations and marketing agencies, and journalists. Students will explore the roles of patients and caregivers, social and cultural issues, communication in health organizations, and the role of mass media. Two programs are offered. The thesis track program emphasizes the student’s development of research skills under faculty supervision (30 credits). The non-thesis track program emphasizes a theoretical foundation based on application of communication courses (36 credits).

REQUIRED COMMUNICATION CORE: (Thesis/Non-Thesis Programs) 9 CREDITS

COM 601  Theories of Communication (3)
COM 602  Methods of Communication Research (3)
COM 603  Qualitative Research Methodologies (3)
ELECTIVES:  
(Thesis Program) 15 CREDITS  
(Non-Thesis Program) 27 CREDITS

Students may select elective courses within the School of Communication or the University; a maximum of six (6) credits thesis track and nine (9) credits non-thesis track may come from outside the School of Communication.

Recommended electives are:

COS 545 Intercultural Communication: International Perspectives (3)  
COS 546 Intercultural Communication: Domestic Perspectives (3)  
COS 591 Advanced Special Topics in Communication Studies: Seminar in Health Communication (3)  
COS 599 Advanced Projects and Directed Research (3)  
COS 674 Seminar in Interpersonal Communication (3)  
COS 682 Seminar in Organizational Communication (3)  
COS 690 Communication Studies Practicum (1-3)  
COM 609 Special Topics (Social Change Communication Theory) (3)  
COM 672 Seminar in Persuasive Communication (3)  
HST 536 U.S. Health Care Crisis: Politics and Policies (3)  
INS 570 Globalization and Health (3)  
INS 670 Advanced Seminar in International Health (3)  
NUR 550 Sociopolitical Dynamics of Health Issues (3)  
SOC 632 Social Psychology of Health and Illness (3)  
SOC 635 Medical Sociology: Issues in Research and Theory (3)  
SOC 691 Special Topics and Current Issues in Medical Sociology (3)  

THESIS COM 710 Master’s Thesis (Thesis Program) 6 CREDITS  
TOTAL CREDITS (Thesis Program) = 30 CREDITS  
TOTAL CREDITS (Non-Thesis Program) = 36 CREDITS

Intercultural Communication Track

The Intercultural Communication Track is designed to provide students with an understanding of the way communication functions in intercultural settings, how culture affects the communication process, and the reciprocal effects of intercultural perceptions on policy in the history of Eastern-Western relations. Career opportunities in this field include corporate diversity trainer, communication director, human resource manager, international service representative, negotiator, and foreign correspondent with government and business organizations. Two programs are offered. The thesis track program emphasizes the student’s development of research skills under faculty supervision (30 credits). The non-thesis track program emphasizes a theoretical foundation based on application of communication courses (36 credits).

REQUIRED COMMUNICATION CORE: (Thesis/Non-Thesis Programs) 9 CREDITS  
COM 601 Theories of Communication (3)  
COM 602 Methods of Communication Research (3)  
COM 603 Qualitative Research Methodologies (3)
ELECTIVES: (Thesis Program) 15 CREDITS
(Non-Thesis Program) 27 CREDITS

Students may select elective courses within the School of Communication or the University; a maximum of six (6) credits thesis track and nine (9) credits non-thesis track may come from outside the School of Communication.

Recommended electives are:

COS 545 Intercultural Communication: International Perspectives (3)
COS 546 Intercultural Communication: Domestic Perspectives (3)
COS 599 Advanced Projects and Directed Research (3)
COS 674 Seminar in Interpersonal Communication (3)
COS 682 Seminar in Organizational Communication (3)
COS 690 Communication Studies Practicum (1-3)
COM 609 Special Topics (Social Change Communication Theory) (3)
COM 672 Seminar in Persuasive Communication (3)
CNJ 510 Comparative Media Systems
INS 513 Information and Communication in International Relations (3)

THESIS COM 710 Master’s Thesis (Thesis Program) 6 CREDITS

TOTAL CREDITS (Thesis Program) = 30 CREDITS
TOTAL CREDITS (Non-Thesis Program) = 36 CREDITS

DEPARTMENT OF STRATEGIC COMMUNICATION

PUBLIC RELATIONS (M.A.)

Public Relations - Thesis

This program includes a thesis. Students must complete a minimum of 30 credit hours at the graduate level with the approval of a faculty advisor. Of the 30 credit hours, 15 credit hours must be at or above the 600 level. No more than six hours will be allowed for advanced projects and directed research (599). Six credit hours will be earned for thesis work.

REQUIRED COMMUNICATION AND PUBLIC RELATIONS CORE: 9 CREDITS

COM 601 Theories of Communication (3)
CPR 620 Public Relations Fundamentals (3)

Select one of the following courses:

COM 602 Methods of Communication Research (3) or
COM 603 Qualitative Research Methodologies (3)

PUBLIC RELATIONS SEQUENCE: 15 CREDITS

CPR 517 Media Relations (3)
CPR 582 International Public Relations (3)
CPR 584 Public Relations Management (3)
CPR 625 Seminar in Public Relations Administration (3)
CPR 629  Public Relations Seminar: Fundraising in the Not-for-Profit Sector (3)
CPR 632  Seminar in Public Relations and Political Campaigns (3)
CPR 633  Seminar in Public Relations: Lobbying and Pressure Groups (3)
CPR 634  Seminar in Public Relations: Non-profit Groups and Governmental Institutions (3)
CPR 644  Seminar in Public Relations Ethics (3)
COM 615  Social Effects of Mass Communication (3)

No comprehensive examinations are required for this degree.

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<tr>
<th>Course Code</th>
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<th>Credits</th>
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<tr>
<td>CPR 629</td>
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<td>Seminar in Public Relations and Political Campaigns</td>
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<td>Social Effects of Mass Communication</td>
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</table>

**THESIS COM 710 Master’s Thesis (Thesis Program) ** 6 CREDITS

**TOTAL CREDITS**  = 30 CREDITS

**Public Relations - Non-Thesis**

Students who elect a program without a thesis must complete a minimum of 36 credit hours at the graduate level with the approval of the faculty advisor. Of the 36 credit hours, 18 must be at or above the 600 level.

**REQUIRED COMMUNICATION AND PUBLIC RELATIONS CORE:** 9 CREDITS

- COM 601 Theories of Communication (3)
- CPR 620 Public Relations Fundamentals (3)

Select one of the following courses:

- COM 602 Methods of Communication Research (3) or
- COM 603 Qualitative Research Methodologies (3)

**PUBLIC RELATIONS SEQUENCE:** 18 CREDITS

- CPR 517 Media Relations (3)
- CPR 582 International Public Relations (3)
- CPR 584 Public Relations Management (3)
- CPR 625 Seminar in Public Relations Administration (3)
- CPR 629 Public Relations Seminar: Fundraising in the Not-for-Profit Sector (3)
- CPR 632 Seminar in Public Relations and Political Campaigns (3)
- CPR 633 Seminar in Public Relations: Lobbying and Pressure Groups (3)
- CPR 634 Seminar in Public Relations: Non-profit Groups and Governmental Institutions (3)
- CPR 644 Seminar in Public Relations Ethics (3)
- COM 615 Social Effects of Mass Communication (3)
- CPR 690 Public Relations Practicum I

**ELECTIVES:** 9 CREDITS

Nine credits must be taken outside the School of Communication’s Public Relations program, with approval of the program director.

No written comprehensive examinations are required for this degree.

**COM 720 Continuous Registration – Research in Residence (0) (may be required for full time study)**

**TOTAL CREDITS**  = 36 CREDITS
DEPARTMENT OF JOURNALISM AND MEDIA MANAGEMENT

JOURNALISM (M.A.)

The Journalism program prepares students to work across different media platforms while also providing the opportunity to focus on particular areas of interest. The program emphasizes the timeless values and skills required to report news, commentary and features in a variety of formats, from newspapers and magazines to online journalism, television and radio. The program stresses analytical and critical thinking as well as effective storytelling in the context of today’s dynamic and evolving media landscape. In consultation with faculty advisors, students are strongly encouraged to develop areas of special interest while acquiring skills in a variety of media. During the first semester, all students take a core of courses that teach journalism from the print, online and broadcast perspectives. In later semesters, students will take additional core courses as well as electives and courses required within their chosen area of concentration.

From time-to-time and after consultation with a faculty adviser, students may take appropriate additional courses in other programs or schools. School of Communication journalism graduate students must complete a minimum of 36 credit hours at the graduate level with the approval of the Journalism graduate program director. Of the 36 credit hours, all must be at or above the 500 level, and 15 must be at or above the 600 level. Students with strong prior experience in a particular area may request a written waiver of a required course from their program director, upon the demonstration of sufficient expertise in that subject. All requirements and courses in the Journalism programs are subject to change as the faculty strives to keep the curriculum current with developments in the professional world and with new technologies and markets.

REQUIRED COMMUNICATION AND JOURNALISM CORE (All tracks): 21 CREDITS

- COM 605 Theories and Methods of Communication (3)
- CNJ 614 Media Law and Ethics Seminar (3)
- CEM 592 The Business of Modern Journalism (3)
- CEM 606 Writing and Reporting Across Platforms (3)
- CVJ 521 Seminar in Visual Storytelling (3)
- CVJ 522 Interaction Design and Information Visualization (3)
- CVJ 530 Programming for Interactivity (3)

Electronic Journalism Track

Students who are interested in working in television and multimedia operations as reporters, producers, writers, directors, editors, programmers, designers, and researchers or students interested in working in information graphics, information visualization, and social media may choose to specialize in Electronic Journalism. Graduates of the broadcast and multimedia journalism program tracks have gone on to work for organizations such as CNN, CBS, NBC, ABC, ESPN, the New York Times, CNN.com, MSNBC.com, Telemundo, Associated Press, TIME, National Geographic as well as local stations across the country and numerous non-government organizations, nonprofits and universities.

REQUIRED COURSES IN ADDITION TO THE CORE: 3 CREDITS

(only for those students pursuing a broadcast focus; others will complete an additional 3 credits of electives, listed below)
CEM 517  Television News Reporting

*Note:  This course is required for those students pursuing a television focus.

ELECTIVES:  9 CREDITS

Students must complete three additional elective courses, chosen with the approval of a faculty advisor. These courses may come from either within or outside of the School of Communication. It is highly recommended that students consider pursuing a professional internship for one of these electives. Elective options include (but are not limited to):

CEM 527  Television Newscast (3)
CEM 599  Advanced Projects and Directed Research (3)
CEM 609  Internship in Electronic Media Journalism (3)
CEM 630  Topics in Electronic Communication (3)
CEM 725  Journalism Internship (3)
CNJ 510  Comparative Media Systems (3)
CNJ 513  Computer-Assisted Reporting (3)
CNJ 515  Reporting and the Internet (3)
CNJ 523  Sports Reporting (3)
CNJ 544  Feature Writing (3)
CVJ 531  Database Journalism (3)
CVJ 550  3D Design and Graphics (3)
CVJ 541  Advanced Audio Video Narratives (3)
CVJ 551  Advanced Programming (3)
CVJ 519  Interactive Storytelling (3)

FINAL CAPSTONE PROJECT:  3 CREDITS

Students, in consultation with program faculty, will complete a final reporting project that reflects in-depth knowledge and analysis of a subject and professional competence in reporting it for the appropriate medium.

TOTAL CREDITS  = 36 CREDITS

*News and Feature Writing Track*

REQUIRED COURSES IN ADDITION TO THE CORE:  12 CREDITS

The News and Feature Writing track allows students the flexibility to design their own program based on their interests, with the advice and approval of a faculty advisor, who will develop a course plan with each student. Beyond the core courses, there are no required courses, though students must take at least 9 credits of the remaining 15 credits in courses that are writing and reporting intensive. Students may take up to a total of 6 credits in courses outside the School of Communication, in internships or as independent study projects, with the approval of a faculty advisor. An internship that involves intensive writing and reporting for a professional media organization and certain independent projects may under some circumstances count toward the required 9-credits of intensive writing and reporting.
Examples of electives (based on availability):

- CNJ 510       Comparative Media Systems (3)
- CNJ 511      Global Media (3)
- CNJ 513       Computer-Assisted Reporting (3)
- CNJ 515       Reporting and the Internet (3)
- CNJ 523       Sports Reporting (3)
- CNJ 544       Feature Writing (3)
- CNJ 599       Advanced Projects and Directed Research (3)
- CNJ 609       Graduate Internship in Journalism (3)
- CNJ 617       International Journalism (3)

Summer study abroad courses in journalism writing or graphic design may be available. Check the summer schedule for details.

FINAL (CAPSTONE) PROJECT: 3 CREDITS

Students, in consultation with program faculty, will complete a final reporting project that reflects in-depth knowledge and analysis of a subject and professional competence in reporting it for the appropriate medium.

TOTAL CREDITS = 36 CREDITS

**Latin American Studies and Journalism Dual M.A. Degrees**

Offered in the multi-cultural setting of Miami, a focal point for Caribbean Basin economic, political, immigration and communication flows, the School of Communication and College of Arts and Sciences have designed this joint degree program focusing on cross-cultural and international journalism. Students leave the university after four semesters and a summer with two M.A. degrees in hand, one in Journalism and the other in Latin American and Caribbean Studies. This specialized course of study is for students who wish to enter careers in journalism and communication specializing on the issues, economies, and peoples of Latin America and the Caribbean region. Sustainable economic development, immigration, social justice and human rights, the environment, international business, and U.S.-Latin American relations are just some of the areas in which students may specialize in an individually tailored course of study anchored by a core of fundamentals. Because this is a joint offering, 18 credits are shared between the two M.A. programs.

FIRST FALL SEMESTER REQUIRED COURSES (based on availability): 12 CREDITS

- CEM 606 Writing and Reporting Across Platforms (3)
- LAS 501 Interdisciplinarity in Latin American and Caribbean Studies (3)
- CVJ 521 Visual Story Telling (3)
- LAS 503 Program Seminar in Latin American Studies and Caribbean Studies (3)

FIRST SPRING SEMESTER REQUIRED COURSES (based on availability): 12 CREDITS

- COM 605 Theories and Methods of Communication (3)
- LAS 502 Interdisciplinary Research Methods (3)
- CNJ 614 Media Law and Ethics Seminar (3)
- LAS 503 Program Seminar in Latin American Studies and Caribbean Studies (3)
SUMMER SEMESTER REQUIRED COURSES (based on availability): 8 CREDITS
CEM 592  The Business of Modern Journalism (3)
LAS 505  Internship in Latin American and Caribbean Studies (5)

SECOND FALL SEMESTER REQUIRED COURSES (based on availability): 13 CREDITS
CVJ 530  Programming for Interactivity (3)
CVJ 522  Interaction Design and Information Visualization (3)
LAS 503  Program Seminar in Latin American Studies and Caribbean Studies (3)
Communication/Journalism Elective (3)
LAS 710  Pre-candidacy Thesis Credits (1)

SECOND SPRING SEMESTER REQUIRED COURSES (based on availability): 9 CREDITS
LAS 503  Program Seminar in Latin American Studies and Caribbean Studies (3)
Communication/Journalism Elective (3)
LAS 710  Pre-candidacy Thesis Credits (3)

TOTAL CREDITS (for the M.A. in Journalism) = 36 CREDITS

J.D./M.A. IN SCHOOL OF COMMUNICATION

This program allows students to earn a J.D. and an M.A. in Communication in 3 to 3½ years. The three School of Communication programs participating in the joint J.D./M.A. program are Communication Studies, Public Relations, and Journalism. This joint degree program will allow 9 J.D. credits to be applied to the M.A. degree and 6 M.A. credits to be applied to the J.D. degree, saving the student 15 credits between the two programs.

LAW SCHOOL REQUIREMENTS:

Nine Law School credits should come from the following courses:

Administrative Law
Communications law
Constitutional Law II
Copyright Law
First amendment Law
Intellectual Property Law
Internet Law
Mass Media Law

The Law School will accept 6 credits from the following School of Communication courses: (the courses selected will depend on the specific program, e.g., Journalism, Public Relations or Communication Studies, though following consultation with, and approval by, a faculty advisor, substitutions may be allowed)

COM 601 Theories of Communication (3)
COM 602 Methods of Communication Research (3)
COM 603 Qualitative Research Methodologies (3)
COM 605 Theories and Methods for Mass Communication Research (3)
CPR 620 Public Relations Fundamentals (3)
CNJ 611 Newswriting and Reporting Seminar (3) or
CEM 606 Writing and Reporting Across Platforms (3)
CEM 592 Special Topics in Electronic Media: The Business of Modern Journalism (3)

COMMUNICATION STUDIES (M.A.):

This program has three tracks, each with 9 credits of required courses and 18 credits of elective courses (plus 9 credits that will be transferred from the School of Law).

Communication Studies Track

This program focuses on developing a theoretical foundation with emphasis on applied communication.

REQUIRED COMMUNICATION CORE: (Non-Thesis Program) 9 CREDITS

COM 601 Theories of Communication (3)
COM 602 Methods of Communication Research (3)
COM 603 Qualitative Research Methodologies (3)

ELECTIVES: (Non-Thesis Program) 27 CREDITS

COM 615 Social Effects of Mass Communication (3)
COM 672 Seminar in Persuasive Communication (3)
COS 545 Intercultural Communication: International Perspectives (3)
COS 546 Intercultural Communication: Domestic Perspectives (3)
COS 560 The Executive Communicator (3)
COS 591 Advanced Special Topics in Communication Studies (3)
COS 599 Advanced Projects and Directed Research (3)
COS 674 Seminar in Interpersonal Communication (3)
COS 682 Seminar in Organizational Communication (3)
COS 684 Organizational Communication Audit Procedures (3)

Health Communication Track

This program focuses on human communication in a health-care context.

REQUIRED COMMUNICATION CORE: (Non-Thesis Programs) 9 CREDITS

COM 601 Theories of Communication (3)
COM 602 Methods of Communication Research (3)
COM 603 Qualitative Research Methodologies (3)
Intercultural Communication Track

This program focuses on the way communication functions in intercultural settings, how culture affects the communication process, and the reciprocal effects of intercultural perceptions on policy in the history of East-West relations.

REQUIRED COMMUNICATION CORE:  Non-Thesis Program  9 CREDITS

COM 601  Theories of Communication (3)
COM 602  Methods of Communication Research (3)
COM 603  Qualitative Research Methodologies (3)

ELECTIVES:  Non-Thesis Program  27 CREDITS

COS 545  Intercultural Communication: International Perspectives (3)
COS 546  Intercultural Communication: Domestic Perspectives (3)
COS 599  Advanced Projects and Directed Research (3)
COS 674  Seminar in Interpersonal Communication (3)
COS 682  Seminar in Organizational Communication (3)
COM 609  Special Topics (Social Change Communication Theory) (3)
COM 672  Seminar in Persuasive Communication (3)
HST 536  U.S. Health Care Crisis: Politics and Policies (3)
INS 570  Globalization and Health (3)
INS 670  Advanced Seminar in International Health (3)
NUR 550  Sociopolitical Dynamics of Health Issues (3)
SOC 632  Social Psychology of Health Illness (3)
SOC 635  Medical Sociology: Issues in Research and Theory (3)
SOC 691  Special Topics and Current Issues in Medical Sociology (3)

PUBLIC RELATIONS (M.A. – NON-THESIS)

This program is focused on public relations with 9 credits of required courses and 18 credits of elective courses (plus 9 credits that will be transferred from the School of Law.)

REQUIRED COMMUNICATION AND PUBLIC RELATIONS CORE:  9 CREDITS

COM 601  Theories of Communication (3)
CPR 620  Public Relations Fundamentals (3)
Select one of the following courses:

COM 602   Methods of Communication Research (3) or
COM 603   Qualitative Research Methodologies (3)

The 18 elective credits can be selected from the following courses:

CPR 517   Media Relations (3)
CPR 582   International Public Relations (3)
CPR 584   Public Relations Management (3)
CPR 625   Seminar in Public Relations Administration (3)
CPR 629   Public Relations Seminar: Fundraising in the Not-for-Profit Sector (3)
CPR 632   Seminar in Public Relations and Political Campaigns (3)
CPR 633   Seminar in Public Relations: Lobbying and Pressure Groups (3)
CPR 634   Seminar in Public Relations: Non-profit Groups and Governmental Institutions (3)
CPR 644   Seminar in Public Relations Ethics (3)
COM 615   Social Effects of Mass Communication (3)

JOURNALISM (M.A.)

The program in journalism has 18 credits of required courses and 9 credits of elective courses (plus 9 credits that will be transferred from the School of Law). Law students with particular areas of interest may consult with a faculty advisor in Journalism to request course substitutions.

REQUIRED COMMUNICATION AND JOURNALISM CORE:      18 CREDITS

COM 605   Theories and Methods of Communication (3)
CEM 592   The Business of Modern Journalism (3)
CEM 606   Writing and Reporting Across Platforms (3)
CVJ 521   Seminar in Visual Storytelling (3)
CVJ 522   Interaction Design and Information Visualization (3)
CVJ 530   Programming for Interactivity (3)

ELECTIVE OPTIONS:                        9 CREDITS

CEM 517   Television News Reporting (3)
CEM 527   Television Newscast (3)
CEM 599   Advanced Projects and Directed Research (3)
CEM 609   Internship in Electronic Media Journalism (3)
CEM 630   Topics in Electronic Communication (3)
CEM 725   Journalism Internship (3)
CNJ 510   Comparative Media Systems (3)
CNJ 511   Global Media (3)
CNJ 513   Computer-Assisted Reporting (3)
CNJ 515   Reporting and the Internet (3)
CNJ 523   Sports Reporting (3)
CNJ 544   Feature Writing (3)
CNJ 599   Advanced Projects and Directed Research (3)
CNJ 609   Graduate Internship in Journalism (3)
CNJ 617   International Journalism (3)
CVJ 519   Interactive Storytelling (3)
CVJ 531 Database Journalism (3)
CVJ 550 3D Design and Graphics (3)
CVJ 551 Advanced Programming (3)
CVJ 541 Advanced Audio Video Narratives (3)
CVJ 649 Team Multimedia Project (3)

**TOTAL CREDITS** = 36 CREDITS

NOTE: The requirements and electives within each track are subject to change.

**DEPARTMENT OF CINEMA AND INTERACTIVE MEDIA**

**MOTION PICTURES (M.F.A.)**

Students must complete a minimum of 66 credit hours with the approval of the faculty advisor. Of the 66 credit hours, at least 24 must be at or above the 600-level, and 12 credit hours at the 700-level must be earned for thesis work.

M.F.A. candidates are expected to follow a set sequence of courses during the first two semesters of their studies. During the second year of studies, candidates are strongly encouraged to explore not only a primary but also a secondary area of specialization in the program and develop a minimum of two creative projects consistent with their areas of primary interest and secondary specialization. A minimum of 6 credits hours in each area of specialization is required. Under faculty committee supervision, students will develop one or two creative projects in the third year of their studies.

All M.F.A. students must demonstrate deeper, critical understanding of motion picture practice in diverse social and cultural contexts. To this purpose, and during their first year of studies, students are expected to produce a short motion picture project abroad. Students are also encouraged to participate in an internship during the summer of the first year or second year of studies.

This three-year program culminates with a thesis portfolio that demonstrates, not only skillful execution of craft, but strong conceptual development rooted in collaborative work and innovative uses of technology.

**FIRST YEAR:**

**REQUIRED FALL SEMESTER COURSE WORK:** 12 CREDITS

CMP 501 Principles of Aesthetics & Analysis (3)
CMP 510 Foundations of Screenwriting (3)
CMP 520 Cinematography (3)
CMP 560 Directing the Actor (3)

**REQUIRED SPRING SEMESTER COURSE WORK:** 12 CREDITS

CMP 530 Introduction to Editing (3)
CMP 511 Writing the Short Script (3)
CMP 570 Producing the Motion Picture (3)
CMP 550 Production Workshop I - Narrative (3)
SECOND YEAR:

FALL SEMESTER COURSE OFFERINGS: 12 CREDITS

CMP 650 Production Workshop II – Individual Projects (3)
CMP 610 Writing the Feature-length Screenplay (3)
CMP 612 Writing for Episodic Television (3)
CMP 670 The Business of Motion Pictures (3)
CMP 660 Directing Performance and Creative Collaboration (3)
CMP 603 Film Directors (3)

SPRING SEMESTER COURSE OFFERINGS: 12 CREDITS

CMP 611 Re-Writing the Feature Screenplay (3)
CMP 653 Documentary Production (3)
CMP 661 Directing the Camera (3)
CMP 640 Sound Design (3)
CMP 630 Advanced Editing (3)
CMP 607 National Cinemas (3)

THIRD YEAR:

RECOMMENDED FALL SEMESTER COURSE WORK: 9 CREDITS

CMP 715 MFA THESIS (6)
CMP 613 Advanced Writing for Episodic Television (3)
CMP 671 Production Management (3)

RECOMMENDED SPRING SEMESTER COURSE WORK: 9 CREDITS

CMP 715 MFA THESIS (6)
CMP 672 Marketing and Distribution (3)

No more than nine credit hours will be allowed for graduate internships and advanced projects and directed research. Courses may be taken, with program director approval, from other programs or departments within the University of Miami.

DOCTOR OF PHILOSOPHY IN COMMUNICATION

Students will not be admitted to the doctoral program until they have earned a master’s degree in communication or in another appropriate field.

Students must complete 57 credits of course work beyond the master’s degree. Twenty-four credits must be in courses at the 600-level. No transfer credits may count toward these 24 credits, and 12 of the 57 credits must be dissertation credits.

REQUIRED CORE COURSES: 21 CREDITS

COM 601 Theories of Communication (3)
COM 602 Methods of Communication Research (3)
COM 603 Qualitative Research Methodologies (3)
COM 604 Advanced Communication Research Methods (3)
COM 609 Special Topics in Communication (3)
COM 698 Doctoral Seminars (3)
Students must take a total of 9 credits in COM 609 and/or COM 698 or any combination of the two.

School of Communication Electives 9-12 CREDITS
Courses outside the School of Communication 12-15 CREDITS

Examinations

All School of Communication Ph.D. students will be given written and oral qualifying examinations following the conclusion of all course work prior to being admitted to candidacy for the Ph.D. degree. A majority of the examination committee must be members of the Graduate Faculty of the University. A failure to pass the qualifying exams will require the student to retake the exams and pass them within one calendar year. Any student who fails to be admitted to candidacy for the degree within this one-year period will be dismissed from the program.

Dissertation

Students must complete 12 dissertation credits. Students must proceed with the dissertation after the dissertation committee has been appointed and the dissertation proposal has been approved by the committee and accepted by the director of graduate studies and the Graduate School. The dissertation must be an investigation of a substantial scholarly topic. A final oral defense of the dissertation is required.

Requirements for Candidacy

Admission to Candidacy is based on:

a. GPA of at least 3.0
b. Approval from program director
c. Successful completion of qualifying examinations

Communication Course Listing
Communication Studies Course Listing
Public Relations Course Listing
Electronic Media Course Listing
Journalism Course Listing
Motion Pictures Course Listing
DEPARTMENTS
- Educational and Psychological Studies (EPS)
- Kinesiology and Sport Sciences (KIN)
- Teaching and Learning (TAL)

DEGREE PROGRAMS

MASTER OF SCIENCE IN EDUCATION (M.S.Ed)
The requirements for the degree of Master of Science in Education are described in a separate section.

SPECIALIST IN EDUCATION (Ed.S)
The requirements for the degree of Specialist in Education are described in a separate section.

DOCTOR OF PHILOSOPHY IN EDUCATION (Ph.D)
The Doctor of Philosophy degree with a major in education is designed to develop personnel competent to conduct research in a particular field of education or behavioral sciences.

Concentrations are offered in:
- exercise physiology (KIN),
- counseling psychology (EPS),
- language and literacy learning in multilingual settings (TAL),
- science, technology, engineering and mathematics (TAL),
- special education (TAL), and
- research, measurement, and evaluation (EPS).

DOCTOR OF EDUCATION (Ed.D)
The Doctor of Education degree is designed to develop personnel in education competent to utilize the results of research in practical situations.

Concentration is offered in:
- higher education leadership (EPS)

ADMISSION REQUIREMENTS

MASTER OF SCIENCE IN EDUCATION (M.S.Ed)
Admission to the Master of Science in Education is based on the following:

a. acceptable scores on the Graduate Record Exam (GRE) taken within the past five years. International applicants whose native language is not English must pass the Test of English as a Foreign Language (TOEFL) and the GRE. Teachers with at least three years full-time teaching experience may apply for a GRE waiver. If a GRE waiver is sought, a 3-page essay on an important educational topic is also required.
b. completion of a bachelor’s degree from an accredited institution;

c. acceptable undergraduate grade point average;

d. three letters of recommendation;

e. an interview (required by some programs);

f. personal characteristics relevant to the profession;

g. teachers who apply for a GRE waiver must submit a 3-page essay on an important topic in education.

Students must select a major from the areas offered. A School of Education and Human Development faculty advisor in the student’s major will be appointed to meet with the student to design a Program of Study/Course Sequence Plan. The Program of Study/Course Sequence Plan must be on file in the Senior Associate Dean’s Office by the end of the first semester of study or future registration will not be permitted.

All students are required to submit a signed Student Responsibility Checklist and the Graduate Student Honor Code by the end of their first semester of enrollment.

**SPECIALIST IN EDUCATION (Ed.S)**

Admission to the Specialist in Education is based on the recommendation of the faculty of the School of Education and Human Development. Among the factors to be considered are the following:

a. completion of a master’s degree with an outstanding record from an accredited institution;

b. adequacy of previous study in the field of education;

c. an appropriate period of successful teaching experience (TAL only);

d. acceptable scores on the Graduate Record Examination (GRE) or approval of a GRE waiver. If a GRE waiver is sought, a 3-page essay on an important educational topic is also required.

e. programs may require an interview.

f. submission of signed Student Responsibility Checklist and the Graduate Student Honor Code. These documents must be submitted to the Office of the Senior Associate Dean by the end of the student’s first semester of enrollment.

The Specialist in Education is a graduate degree requiring a minimum of 30 credit hours beyond a Master’s degree.

Applications for admission to the program are filed directly with the Graduate Admissions Office in the School of Education and Human Development. Further information may be secured by addressing the Department Chair of the specific program.
DOCTOR OF PHILOSOPHY (Ph.D)

Consideration for admission to the PhD program will be based on the following factors:

a. acceptable Graduate Record Exam (GRE) scores taken within the past five years; international applicants whose native language is not English must pass the Test of English for Foreign Languages (TOEFL);

b. professional experience relevant to degree program;

c. undergraduate grade point average of 3.0 or better (on a four point scale);

d. three letters of recommendation that address the applicant’s academic potential;

e. available student space in program;

f. admissions interview (optional for each program);

g. personal characteristics relevant to the profession;

h. For TAL: availability of faculty advisor willing to mentor the student.

i. For EPS, Counseling Ph.D.: Applications for doctoral study are due by December 10. Doctoral applications are reviewed once each year.

DOCTOR OF EDUCATION (Ed.D)

Consideration for admission to the doctoral program will be based on the following factors:

a. acceptable Graduate Record Exam (GRE) scores taken within the past five years; international applicants whose native language is not English must pass the Test of English for Foreign Languages (TOEFL);

b. professional experience relevant to degree program;

c. undergraduate grade point average of 3.0 or better (on a four point scale);

d. three letters of recommendation that address the applicant’s academic potential;

e. available student space in program;

f. admissions interview;

g. personal characteristics relevant to the profession;
DEPOSIT

Upon being admitted into any graduate program in the School of Education and Human Development, an applicant must verify her or his intention to attend through the MyUM system. In addition, the incoming student must submit a non-refundable deposit of $75. The deposit will be applied to the student’s tuition upon enrollment.

FINANCIAL ASSISTANCE

The following policies apply to all graduate programs in the School of Education and Human Development.

The School of Education and Human Development provides many forms of financial assistance for students enrolled in its graduate programs. These include tuition discounts, scholarships (including federally funded scholarships), tuition waivers, training fellowships, and other forms of help. Financial assistance is to be used only for enrollment in courses that define each student’s program. Students who are found to have enrolled in courses outside of their programs of study will be charged full tuition for those courses.

Teacher Tuition Discounts do not apply to PhD programs.

Financial assistance may not be applied to retaking of courses.

Financial assistance whose sources are outside of the School of Education and Human Development, for example Federal loans provided by the University of Miami, shall be governed by all applicable rules, regulations and policies. Specifically, many federal loans and grants have conditions limiting the programs and/or courses to which they may be applied. Some federal loans are restricted to graduate courses only; some fellowships, grants or traineeships may entail post-graduation employment commitments. Alternatively, private scholarships or fellowships may have their own conditions. Please be sure to ask about and to fully understand the conditions which govern whatever type of financial assistance you are offered.

DEGREE REQUIREMENTS

In addition to the formal academic requirements, the School of Education and Human Development requires its students to demonstrate personal qualities that, in the judgment of the faculty, would permit them to function effectively in their professional roles. The School of Education and Human Development reserves the right to dismiss any student who is academically or personally unwilling or unable to carry out the professional responsibilities of the respective professions for which he/she is being trained. Conduct which may be considered unprofessional may include, but is not limited to, research or professional misconduct, dishonesty, cheating, plagiarism, sexual harassment, discrimination on the basis of race, ethnicity, religion, or sexual orientation, and inappropriate interpersonal behavior. It is up to all students to fulfill their responsibilities in a timely and professional manner, to represent themselves and the University with honesty, and to treat others with dignity and respect.
Students are required to maintain enrollment of at least one credit hour on a continuous basis during all fall and spring semesters until such time as they fulfill their graduate degree requirements. Note: Failure to do so may result in additional fees and/or inability to continue the program.

Also, students are required to be enrolled in the semester they graduate.

MASTER OF SCIENCE IN EDUCATION (M.S.Ed)

1. Students must pass a comprehensive written examination, portfolio (with an oral examination as a possible additional requirement), capstone course, project, thesis, or requirement specified by the program. When a thesis is chosen (in the KIN Dept. or EPS Dept.), a maximum of six credits may be counted toward the total degree requirements, and an oral examination in defense of the thesis will be required.

2. Students must complete a minimum of thirty credits at the graduate level with an average of B and no grade lower than C-. Course substitutions will not apply toward graduation without the written approval of the chairperson of the Department and the Senior Associate Dean. Students are required to have Department and Senior Associate Dean’s approval prior to taking a course at another university.

3. Students enrolled in any Florida Department of Education approved program must fulfill any and all additional requirements (e.g., passing state teacher tests) specified by the program approval.

4. Students in counseling must complete the required “Personal Growth Experience” form.

All work towards the Master’s degree must be completed within six years of initial enrollment.

SPECIALIST IN EDUCATION (Ed.S)

The Specialist in Education is a degree independent of the Doctor of Philosophy in Education. Although there is normally some overlap in coursework, admission to a specialist program does not imply admission to a doctoral program.

1. A supervisory committee consisting of three faculty members in the student’s area of study will be appointed by the School of Education and Human Development.

2. Upon admission to the specialist program, a formal program of study is approved by the Supervisory Committee that consists of 3 faculty members.

3. A minimum of 60 graduate credits, (or 30 credits after completion of the Master’s program) is required. The program must include at least 30 graduate credits earned at the University of Miami and at least 18 graduate credits earned following admission to the specialist program. The specialist program of study is developed in consultation with the Supervisory Committee that consists of 3 faculty members (a chairperson and 2 other members).
4. A written examination, portfolio, or capstone project will be required. The written comprehensive examination will cover the student’s program of study. The examination must be taken during or after the final semester in which the student is enrolled for coursework in the program. The project will be directed by the Chairperson of the Specialist Supervisory Committee.

5. All specialist students must engage in teaching and/or research appropriate to their degree program.

All work for the degree of Specialist in Education must be completed within six years of initial enrollment.

**DOCTOR OF PHILOSOPHY IN EDUCATION (Ph.D)**

Upon admission to graduate study, a supervisory committee, consisting of four members (composed as per UM Graduate School regulations), will be appointed by the School of Education and Human Development.

1. The student will meet with the chairperson of this committee to design a Program of Study/Residency Plan.

2. The Program of Study/Residency Plan must be approved by the supervisory committee, the department chairperson, and the Senior Associate Dean of Graduate Studies in the School of Education and Human Development.

3. The Program of Study/Residency Plan must be filed with both the Graduate School and the School of Education and Human Development by the end of the second semester of enrollment or future registration will not be permitted.

All students are required to submit a signed Student Responsibility Checklist and the Graduate Student Honor Code by the end of their first semester of enrollment.

The residence requirement is two full-time consecutive semesters of course work at the University of Miami.

The minimum total credits required beyond the Bachelor’s are 60, plus a minimum of 12 dissertation credits.

Fifteen credit hours of statistics and research methods are required as prescribed by the supervisory committee.

Students are required to complete all Ph. D requirements within 8 years of initial enrollment.

**DOCTOR OF EDUCATION (Ed.D)**

Upon admission to graduate study, a supervisory committee, consisting of three members, will be appointed by the School of Education and Human Development.

1. The student will meet with the chairperson of this committee to design a Program of Study/Residency Plan.
2. The Program of Study/Residency Plan must be approved by the supervisory committee, the department chairperson, and the Senior Associate Dean of Academic Studies in the School of Education and Human Development.

3. The Program of Study/Residency Plan must be filed with both the Graduate School and the School of Education and Human Development by the end of the second semester of enrollment or future registration will not be permitted.

All students are required to submit a signed Student Responsibility Checklist and the Graduate Student Honor Code by the end of their first semester of enrollment.

The minimum total credits required beyond the bachelors are 60, including a minimum of 12 dissertation credits.

A supporting area consisting of at least 12 credits is required; the student must be qualified for admission to graduate status in this area, and receive approval for enrollment from the appropriate department and from the School of Education and Human Development.

A minimum of twelve credit hours of statistics and research methods are required as prescribed by the supervisory committee.

Students are required to complete all Ed. D requirements within 8 years of initial enrollment.
DEPARTMENT OF EDUCATIONAL AND PSYCHOLOGICAL STUDIES  
Dept. Code:  EPS

PROGRAMS

MASTER OF SCIENCE IN EDUCATION (M.S.Ed.)

- Community and Social Change
- Counseling:
  - Counseling and Research
  - Marriage and Family Therapy
  - Mental Health Counseling
- Higher Education Administration:
  - Enrollment Management
  - Student Life and Development
- Research, Measurement, and Evaluation

DOCTOR OF PHILOSOPHY (Ph.D.)

- Counseling Psychology
- Research, Measurement, and Evaluation

DOCTOR OF EDUCATION (Ed.D.)

- Higher Education Leadership

CERTIFICATES (not a degree program)

- Data Management and Statistical Analysis
- Higher Education Administration/Enrollment Management
- Higher Education Administration/Student Life and Development
- Latino Mental Health Counseling

Contact the Department of Educational and Psychological Studies for a program sheet and course listings for each of the following programs.

MASTER OF SCIENCE IN EDUCATION (M.S.Ed.)

COMMUNITY AND SOCIAL CHANGE

The Community and Social Change Master’s program is designed to prepare a new generation of creative leaders for the not-for-profit sector who are knowledgeable in the research, theories, and practice of individual and social well-being. The vision of the program is to be a hub for innovative and applied leadership in community well-being and social change. The mission of the program is to prepare globally aware leaders, researchers, and agents of change who create, inspire, and engage community organizations to foster well-being in diverse community settings. The program is designed to develop community leaders who can help understand and address the real challenges faced by local communities in a multi-cultural and global context. The program is designed to accommodate a variety of students by offering courses in a unique format that incorporates the following domains; 1) Core theory
and skill-building coursework, 2) Core research coursework, 3) Experiential field experience (practicum), and 4) Capstone experience (Comprehensive exam or major project).

COUNSELING

Programs offered in counseling and counseling psychology are characterized by intensive clinical supervision by faculty members in an on-campus clinic, by strengths in the areas of family systems and health psychology, and by the rich multi-ethnic composition of the community, students and clients.

The M.S.Ed. in counseling is a two year program which includes 54-60 credits of coursework and a comprehensive examination in one of three areas of specialization:

- Counseling and Research – This 54 credit program focuses on providing students with extensive grounding in the foundations for conducting research in the counseling field. Many students take this track in preparation for applying to doctoral programs in psychology. It provides an advanced level of research training as well as standard training for clinical work. It does not fulfill the academic requirements for licensure in Florida.

- Marriage and Family Therapy – This 60 credit program provides the academic and pre-degree supervision requirements for licensing as a Marriage and Family Therapist in the State of Florida.

- Mental Health Counseling – This 60 credit program provides the academic and pre-degree supervision requirements for licensing as a Mental Health Counselor in the State of Florida.

HIGHER EDUCATION ADMINISTRATION (Enrollment Management/Student Life and Development)

The Higher Education Administration Program, which offers a Master of Science in Education with concentrations in Enrollment Management or Student Life and Development, is designed to produce skilled and versatile higher education administrators who understand all aspects of their professional environment.

Our graduates enter a variety of roles in college and university administration with the ability to consider today’s challenges from a broad-based, highly informed perspective.

Also offered is a Certificate Program for working professionals who already have Master’s degrees and seek career-furthering credentials and skills.

- The Enrollment Management concentration (33 credits), the product of a unique collaboration between the School of Education and Human Development and the Division of Enrollments, integrates theory, research, teamwork, and effective communication. It is an interdisciplinary program, with courses also required in the School of Business Administration. Opportunities abound for integrating research and theory in daily practice.

- The Student Life and Development concentration (36 credits) provides knowledge and skills necessary to facilitate undergraduate students’
transition, adjustment and involvement in college, in ways that enhance their academic achievement and lead to persistence and graduation.

**RESEARCH, MEASUREMENT AND EVALUATION**

The objective of the RME programs (30 credits) is to train individuals to become experts in the research methodology, measurement, and applied statistics used in conducting applied research, evaluations, and assessments related to educational, psychological, and health outcomes. Graduates of the program have obtained skills concerning: (a) how to design research studies and evaluations, (b) what statistical and measurement analyses must be conducted to answer the desired research questions, and (c) how to analyze the collected data using appropriate statistical software. An emphasis of the program is on gaining experience in the application of the relevant methodologies using real-world data examples.

<table>
<thead>
<tr>
<th>Core courses (24 credits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPS553 Introduction to Statistics</td>
</tr>
<tr>
<td>EPS568 Computer Applications in Educational and Behavioral Sciences Research</td>
</tr>
<tr>
<td>EPS654 Program Evaluation</td>
</tr>
<tr>
<td>EPS661 Measurement and Psychometric Theory</td>
</tr>
<tr>
<td>EPS670 Introduction to Research Methods</td>
</tr>
<tr>
<td>EPS671 General Linear Modeling</td>
</tr>
<tr>
<td>EPS672 Applied Multivariate Statistics</td>
</tr>
<tr>
<td>EPS673 Introduction to Structural Equation Models (SEM)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electives (6 credits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPS607 Advanced Individual Study</td>
</tr>
<tr>
<td>EPS650 Meta-analytic Methods for Research synthesis</td>
</tr>
<tr>
<td>EPS651 Survey Research Methods</td>
</tr>
<tr>
<td>EPS659 Field Experience in Educational Research</td>
</tr>
<tr>
<td>EPS675 Qualitative Research Methods I</td>
</tr>
<tr>
<td>EPS676 Qualitative Research Methods II: Case Studies &amp; Grounded Theory</td>
</tr>
<tr>
<td>EPS677 Qualitative Research Methods III: Interviewing &amp; Content Analysis</td>
</tr>
<tr>
<td>MAS602 Multivariate Statistics</td>
</tr>
<tr>
<td>MAS603 Design of Experiments</td>
</tr>
<tr>
<td>MTH524 Introduction to Probability Theory</td>
</tr>
<tr>
<td>MTH525 Introduction to Mathematical Statistics</td>
</tr>
<tr>
<td>MTH542 Statistical Analysis</td>
</tr>
<tr>
<td>MTH625 Multivariate Analysis</td>
</tr>
</tbody>
</table>

Comprehensive exams
DOCTOR OF PHILOSOPHY (Ph.D.)

COUNSELING PSYCHOLOGY

The Counseling Psychology Program has been fully accredited by The American Psychological Association since 1995 and has a proud tradition of preparing students as scholars, clinicians and community leaders. Firmly committed to the foundational values of the discipline of counseling psychology, including its emphasis on prevention, optimal human development and the promotion of individual, family and community well-being, the program strives to prepare students who will make a difference in the world through research, scholarship and reflective practice. The mission of the program is to nurture the development of counseling psychology graduate students and faculty as reflective researchers and scientist-practitioners committed to promoting psychological well-being in a multicultural complex world.

RESEARCH, MEASUREMENT AND EVALUATION

The objective of the RME programs is to train individuals to become experts in the research methodology, measurement, and applied statistics used in conducting applied research, evaluations, and assessments related to educational, psychological, and health outcomes. Graduates of the program have obtained skills concerning: (a) how to design research studies and evaluations, (b) what statistical and measurement analyses must be conducted to answer the desired research questions, and (c) how to analyze the collected data using appropriate statistical software. An emphasis of the program is on gaining experience in the application of the relevant methodologies using real-world data examples.

<table>
<thead>
<tr>
<th>Core courses (36 credits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPS553  Introduction to Statistics</td>
</tr>
<tr>
<td>EPS568  Computer Applications in Educational and Behavioral Sciences Research</td>
</tr>
<tr>
<td>EPS650  Meta-analytic Methods for Research Synthesis</td>
</tr>
<tr>
<td>EPS661  Measurement and Psychometric Theory</td>
</tr>
<tr>
<td>EPS662  Item Response Theory</td>
</tr>
<tr>
<td>EPS670  Introduction to Research Methods</td>
</tr>
<tr>
<td>EPS671  General Linear Models</td>
</tr>
<tr>
<td>EPS672  Applied Multivariate Statistics</td>
</tr>
<tr>
<td>EPS673  Introduction to Structural Equation Models (SEM)</td>
</tr>
<tr>
<td>EPS674  Introduction to Multilevel Modeling</td>
</tr>
<tr>
<td>EPS675  Qualitative Research Methods I</td>
</tr>
<tr>
<td>PSY698  Seminar in Quantitative Psychology (Advanced Structural Equation Modeling)</td>
</tr>
</tbody>
</table>

Research Apprenticeship (6 credits)

| EPS607  Advanced Individual Study |

Field Experience (6 credits)

| EPS659  Field Experience in Educational Research |
DOCTOR OF EDUCATION (Ed.D.)

**HIGHER EDUCATION LEADERSHIP**

The Higher Education Leadership program, which offers a Doctor of Education degree (Ed.D.), is committed to preparing high-quality graduates for senior leadership positions in colleges and universities, state and federal agencies, and other educational organizations. The Ed.D program is guided by a practitioner-scholar model that combines theoretical offerings with application to practical higher education problems. Students focus on areas of special interest and choose dissertation projects that address issues confronting the contemporary higher education workplace.

The Executive Track is an innovative option in the Ed.D program explicitly designed to meet the needs of working professionals. Courses are offered on weekends, and a cohort design allows students to develop meaningful relationships, support one another, and learn from the diverse experiences of fellow educators. Ed.D students may also choose to take courses in a traditional weekly format.

An emphasis across the traditional and Executive Ed.D curriculum is on how theory and empirical evidence inform the administrative, organizational, and policy contexts within postsecondary education. Unique to the University of Miami’s Higher Education Leadership program curriculum is its component in Enrollment Management, a comprehensive strategy that promotes the seamless integration of administrative responsibilities to efficiently and effectively meet institutional needs and promote student success.
CERTIFICATES

DATA MANAGEMENT AND STATISTICAL ANALYSIS (a minimum of 4 courses)

This Certificate program is designed for individuals seeking the career-enhancing skills of data management and statistical analysis. The training provided in this certificate program will provide a foundation to individuals on how to organize and manage quantitative data using data management software and how to analyze the obtained data using relevant statistical analyses to answer a wide range of questions concerning the outcomes of interests.

HIGHER EDUCATION ADMINISTRATION/ENROLLMENT MANAGEMENT, Post Master’s Degree (a minimum of 4 courses)

The Certificate can be integrated into the Master’s Program in Higher Education Administration. It can be completed in addition to or after completion of a Master’s Program in Higher Education Administration, or a related field.

HIGHER EDUCATION ADMINISTRATION/STUDENT LIFE AND DEVELOPMENT, Post Master’s Degree (a minimum of 4 courses)

The Certificate can be integrated into the Master’s Program in Higher Education Administration. It can be completed in addition to or after completion of a Master’s Program in Higher Education Administration, or a related field.

LATINO MENTAL HEALTH COUNSELING (a minimum of 3 courses)

This Certificate requires previous graduate training. It can be acquired after graduation from the Masters Program in Counseling or can be integrated into the Doctoral Program in Counseling Psychology. It can be completed in addition to or after completion of a degree program in counseling, psychology or a related field.

Educational and Psychological Studies Course Listing
KINESIOLOGY AND SPORT SCIENCES
Dept. Code: KIN

PROGRAMS

MASTER OF SCIENCE IN EDUCATION (M.S.Ed.)

- Exercise Physiology:
  - Regular track
  - Strength and Conditioning/Fitness Entrepreneurship
  - Accelerated tracks are offered in each of the above, pursuant to a BS degree in Exercise Physiology from the University of Miami

- Sports Medicine with a Concentration in Athletic Training
  - Accelerated track pursuant to a BS degree in Athletic Training from the University of Miami

- Sport Administration

DOCTOR OF PHILOSOPHY (Ph.D.)

- Exercise Physiology

CERTIFICATE

- Women’s Health

Contact the Department of Kinesiology and Sport Sciences for a program sheet and course listings for each of the following programs.

MASTER OF SCIENCE IN EDUCATION (M.S.Ed.)

PROGRAM IN EXERCISE PHYSIOLOGY (regular track)

Graduate students in this program receive a sound scientific education with opportunities for applied physiological research and hands-on clinical experiences.

36 credits from among the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>KIN520</td>
<td>Cellular Exercise Physiology</td>
</tr>
<tr>
<td>KIN521</td>
<td>Systemic Exercise Physiology</td>
</tr>
<tr>
<td>KIN530</td>
<td>Laboratory: Techniques in Functional Evaluation of Skeletal Muscle</td>
</tr>
<tr>
<td>KIN640</td>
<td>Neurophysiology in Exercise Science</td>
</tr>
<tr>
<td>KIN579</td>
<td>Principles of Exercise Prescription Assessment: Cardiovascular</td>
</tr>
<tr>
<td>KIN586</td>
<td>Exercise Prescription Assessment Laboratory</td>
</tr>
<tr>
<td>KIN646</td>
<td>Research Methods in Exercise &amp; Sport Sciences</td>
</tr>
<tr>
<td>EPS691</td>
<td>Practicum in Exercise and Sport Sciences</td>
</tr>
<tr>
<td>KIN699</td>
<td>Special Project in Exercise and Sport Sciences</td>
</tr>
<tr>
<td>KINXXX</td>
<td>Restricted Electives</td>
</tr>
</tbody>
</table>
ACCELERATED TRACK IN EXERCISE PHYSIOLOGY PURSUANT TO COMPLETION OF BS DEGREE IN EXERCISE PHYSIOLOGY AT UM

30 credits from among the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>KIN520</td>
<td>Cellular Exercise Physiology</td>
</tr>
<tr>
<td>KIN530</td>
<td>Laboratory: Techniques in Functional Evaluation of Skeletal Muscle</td>
</tr>
<tr>
<td>EPS553</td>
<td>Introductory Statistics</td>
</tr>
<tr>
<td>KIN640</td>
<td>Neurophysiology</td>
</tr>
<tr>
<td>KIN646</td>
<td>Research Methods in Exercise &amp; Sport Sciences</td>
</tr>
<tr>
<td>KIN579</td>
<td>Principles of Exercise Prescription/Assessment: Cardiovascular</td>
</tr>
<tr>
<td>KIN586</td>
<td>Exercise Prescription Assessment Lab</td>
</tr>
<tr>
<td>KIN699</td>
<td>Special Project KIN</td>
</tr>
<tr>
<td>KINXXX</td>
<td>Elective</td>
</tr>
</tbody>
</table>

PROGRAM IN EXERCISE PHYSIOLOGY: TRACK IN STRENGTH AND CONDITIONING/FITNESS ENTREPRENEURSHIP

A program for persons interested in clinical hands on training for personal and community health and the fitness entrepreneur.

36 credits to be taken from among the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>KIN536</td>
<td>Strength and Conditioning I</td>
</tr>
<tr>
<td>KIN537</td>
<td>Strength and Conditioning II</td>
</tr>
<tr>
<td>KIN545</td>
<td>Clinical Exercise Programs</td>
</tr>
<tr>
<td>KIN546</td>
<td>Elite Conditioning I</td>
</tr>
<tr>
<td>KIN547</td>
<td>Elite Conditioning II</td>
</tr>
<tr>
<td>KIN563</td>
<td>Facility Management</td>
</tr>
<tr>
<td>KIN570</td>
<td>Advanced Exercise Programming</td>
</tr>
<tr>
<td>KIN577</td>
<td>Advanced Nutrition</td>
</tr>
<tr>
<td>KIN579</td>
<td>Principles of Exercise Prescription/Assessment: Cardiovascular</td>
</tr>
<tr>
<td>KIN580</td>
<td>Neuromusc. Basis of Ex Presc</td>
</tr>
<tr>
<td>KIN586</td>
<td>Laboratory: Exercise Prescription Assessment</td>
</tr>
<tr>
<td>KIN599</td>
<td>Adv. Programming for Endurance</td>
</tr>
<tr>
<td>KIN646</td>
<td>Research Methods</td>
</tr>
<tr>
<td>KIN697</td>
<td>Strength and Conditioning Internship Experience (optional)</td>
</tr>
</tbody>
</table>
ACCELERATED TRACK IN EXERCISE PHYSIOLOGY: STRENGTH AND CONDITIONING/FITNESS ENTREPRENEURSHIP PURSUANT TO COMPLETION OF A BS DEGREE IN EXERCISE PHYSIOLOGY AT UM

30 credits from among the following courses:

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>KIN536</td>
<td>Strength and Conditioning I</td>
</tr>
<tr>
<td>KIN537</td>
<td>Strength and Conditioning II</td>
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<td>KIN545</td>
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</tr>
<tr>
<td>KIN586</td>
<td>Laboratory: Exercise Prescription/Assessment</td>
</tr>
<tr>
<td>KIN646</td>
<td>Research Methods</td>
</tr>
<tr>
<td>KIN697</td>
<td>Strength and Conditioning Internship Experience (optional)</td>
</tr>
</tbody>
</table>

PROGRAM IN SPORTS MEDICINE WITH A CONCENTRATION IN ATHLETIC TRAINING

A program for persons interested in the medical aspects of sports injuries including prevention, treatment, and rehabilitation.

36 credits from the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>KIN535</td>
<td>Clinical Biomechanics for Sports Medicine Professionals</td>
</tr>
<tr>
<td>KIN588</td>
<td>Advanced Gross Anatomy in Kinesiology and Sport Sciences</td>
</tr>
<tr>
<td>KIN615</td>
<td>Evidence Based Sports Medicine</td>
</tr>
<tr>
<td>KIN616</td>
<td>Advanced Rehabilitation Techniques in Sports Medicine</td>
</tr>
<tr>
<td>KIN617</td>
<td>Advanced Evaluation Techniques in Sports Medicine</td>
</tr>
<tr>
<td>KIN557</td>
<td>Advanced Diagnostic Image Techniques in Sports Medicine</td>
</tr>
<tr>
<td>KIN620</td>
<td>Practicum in Athletic Training 1</td>
</tr>
<tr>
<td>KIN621</td>
<td>Independent Study 1</td>
</tr>
<tr>
<td>KIN622</td>
<td>Practicum in Athletic Training 2</td>
</tr>
<tr>
<td>KIN623</td>
<td>Independent Study 2</td>
</tr>
<tr>
<td>KIN624</td>
<td>Practicum in Athletic Training 3</td>
</tr>
<tr>
<td>KIN625</td>
<td>Independent Study 3</td>
</tr>
<tr>
<td>KIN626</td>
<td>Practicum in Athletic Training 4</td>
</tr>
<tr>
<td>KIN627</td>
<td>Independent Study 4</td>
</tr>
<tr>
<td>KIN646</td>
<td>Research Methods in Exercise and Sport Sciences</td>
</tr>
<tr>
<td>KIN691</td>
<td>Practicum in Exercise and Sport Sciences</td>
</tr>
<tr>
<td>KIN699</td>
<td>Special Project in Exercise and Sport Sciences</td>
</tr>
</tbody>
</table>
ACCELERATED TRACK IN SPORTS MEDICINE WITH A CONCENTRATION IN ATHLETIC TRAINING PURSUANT TO COMPLETION OF BS DEGREE IN ATHLETIC TRAINING AT UM

30 credits from among the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>KIN535</td>
<td>Clinical Biomechanics for Sports Medicine Professionals</td>
</tr>
<tr>
<td>KIN588</td>
<td>Advanced Gross Anatomy in Kinesiology and Sport Sciences</td>
</tr>
<tr>
<td>KIN615</td>
<td>Evidence Based Sports Medicine</td>
</tr>
<tr>
<td>KIN616</td>
<td>Advanced Rehabilitation Techniques in Sports Medicine</td>
</tr>
<tr>
<td>KIN617</td>
<td>Advanced Evaluation Techniques in Sports Medicine</td>
</tr>
<tr>
<td>KIN557</td>
<td>Advanced Diagnostic Image Techniques in Sports Medicine</td>
</tr>
<tr>
<td>KIN620</td>
<td>Practicum in Athletic Training 1</td>
</tr>
<tr>
<td>KIN621</td>
<td>Independent Study 1</td>
</tr>
<tr>
<td>KIN622</td>
<td>Practicum in Athletic Training 2</td>
</tr>
<tr>
<td>KIN623</td>
<td>Independent Study 2</td>
</tr>
<tr>
<td>KIN624</td>
<td>Practicum in Athletic Training 3</td>
</tr>
<tr>
<td>KIN625</td>
<td>Independent Study 3</td>
</tr>
<tr>
<td>KIN626</td>
<td>Practicum in Athletic Training 4</td>
</tr>
<tr>
<td>KIN627</td>
<td>Independent Study 4</td>
</tr>
<tr>
<td>KIN646</td>
<td>Research Methods in Exercise and Sport Sciences</td>
</tr>
<tr>
<td>KIN691</td>
<td>Practicum in Exercise and Sport Sciences</td>
</tr>
<tr>
<td>KIN699</td>
<td>Special Project in Exercise and Sport Sciences</td>
</tr>
</tbody>
</table>

SPORT ADMINISTRATION

A program for persons interested in athletic sport administration or recreation and leisure sports administration.

Courses include (*indicates required courses):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>KIN562</td>
<td>Fiscal Management in Sport Administration*</td>
</tr>
<tr>
<td>KIN563</td>
<td>Facilities &amp; Event Management*</td>
</tr>
<tr>
<td>KIN564</td>
<td>Sport Marketing*</td>
</tr>
<tr>
<td>KIN565</td>
<td>Legal Aspects of Sports and Exercise Science*</td>
</tr>
<tr>
<td>KIN566</td>
<td>Organization &amp; Administration of Sport Programs</td>
</tr>
<tr>
<td>KIN567</td>
<td>Elements of Sport Psychology</td>
</tr>
<tr>
<td>KIN573</td>
<td>Sport Governance</td>
</tr>
<tr>
<td>KIN574</td>
<td>Ethical Decision Making in Sport and the Professions*</td>
</tr>
<tr>
<td>KIN575</td>
<td>Essential Leadership Skills in Sport and the Professions*</td>
</tr>
<tr>
<td>KIN590</td>
<td>Special Topics in Exercise &amp; Sport Sciences</td>
</tr>
<tr>
<td>KIN603</td>
<td>Contemporary Issues in Exercise and Sport Sciences</td>
</tr>
</tbody>
</table>
DOCTOR OF PHILOSOPHY (Ph.D.)

EXERCISE PHYSIOLOGY

The Department of Kinesiology and Sport Sciences also offers a doctoral program in Exercise Physiology. Coursework specialization is available in this program for persons interested in clinical and research orientation in the area of exercise physiology.

30 credits from among the following courses:

<table>
<thead>
<tr>
<th>KIN520</th>
<th>Cellular Exercise Physiology</th>
</tr>
</thead>
<tbody>
<tr>
<td>KIN521</td>
<td>Advanced Systemic Exercise Physiology</td>
</tr>
<tr>
<td>KIN530</td>
<td>Laboratory: Techniques in Functional Evaluation of Skeletal Muscle</td>
</tr>
<tr>
<td>KIN577</td>
<td>Advanced Nutrition for Health and Human Performance</td>
</tr>
<tr>
<td>KIN579</td>
<td>Principles of Exercise Prescription/Assessment: Cardiovascular</td>
</tr>
<tr>
<td>KIN586</td>
<td>Exercise Prescription Assessment Laboratory</td>
</tr>
<tr>
<td>KIN640</td>
<td>Neurophysiology in Exercise Science</td>
</tr>
<tr>
<td>Restricted Electives (9 credits of graduate KIN courses)</td>
<td></td>
</tr>
<tr>
<td>Outside Supporting Field (12 credits from another department)</td>
<td></td>
</tr>
<tr>
<td>Research Competencies (15 credits)</td>
<td></td>
</tr>
<tr>
<td>KIN646</td>
<td>Research Methods in Exercise and Sport Sciences</td>
</tr>
<tr>
<td>EPS661</td>
<td>Measurement and Psychometric Theory</td>
</tr>
<tr>
<td>EPS671</td>
<td>General Linear Models</td>
</tr>
<tr>
<td>EPS672</td>
<td>Regression Methods</td>
</tr>
<tr>
<td>EPS673</td>
<td>Introduction to Structural Equation Models (SEM)</td>
</tr>
<tr>
<td>Unrestricted Electives (3 credits of graduate coursework)</td>
<td></td>
</tr>
<tr>
<td>Dissertation (12 credits)</td>
<td></td>
</tr>
<tr>
<td>Measurement and Psychometric Theory</td>
<td></td>
</tr>
</tbody>
</table>

Note: 2/3 of all coursework must be at or above the 600 level. Students entering with a Master’s degree in Exercise Physiology or a related degree must take a minimum of 30 credits of graduate coursework at the University of Miami in addition to 12 credits of dissertation.
CERTIFICATE

CERTIFICATE IN WOMEN’S HEALTH

A certificate in women’s health (12 credits) is available for those wishing to specialize in research issues, trends, and physiological concerns of women across the female lifespan. These courses may be considered as part of their outside supporting field in the doctoral program and include:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>KIN681</td>
<td>Issues Specific to Women’s Health</td>
</tr>
<tr>
<td>KIN682</td>
<td>Psychosocial Issues in Women’s Health</td>
</tr>
<tr>
<td>KIN683</td>
<td>Sports Medicine for the Female Athlete</td>
</tr>
<tr>
<td>KIN684</td>
<td>Science and Etiology of Obesity</td>
</tr>
</tbody>
</table>

Note: The Women’s Health Certificate consists of 12 credits with a grade of "C" or higher in this specialty. Students will receive a certificate of completion upon completing all coursework in this specialty area.

Kinesiology and Sport Sciences Course Listing
TEACHING AND LEARNING
Dept. Code: TAL

PROGRAMS

MASTER OF SCIENCE IN EDUCATION (M.S.Ed.)
- Advanced Professional Studies
  Tracks: Education and Social Change
  Cayman Islands
- Early Childhood Special Education
- Mathematics, Science and Technology for Resource Teachers (MST-RT) in Elementary Schools
- Reading

SPECIALIST IN EDUCATION (Ed.S)
- Early Childhood Special Education
- Mathematics, Science and Technology for Resource Teachers (MST-RT) in Elementary Schools

DOCTOR OF PHILOSOPHY (Ph.D.)
- Teaching and Learning with specializations in:
  Language and Literacy Learning in Multilingual Settings,
  Science, Technology, Engineering and Mathematics, or Special Education

Contact the Department of Teaching and Learning for a program sheet and course listings for each of the following programs.

MASTER OF SCIENCE IN EDUCATION (M.S.Ed)

The Department of Teaching and Learning offers programs leading to a Master of Science in Education degree for individuals who are currently certified.

Note: Students in these programs must meet FLDOE requirements.

Periodically, the School of Education and Human Development offers various Advanced Professional Studies programs to specific groups of teachers (cohorts). The purpose of these programs is to prepare teachers to assume leadership roles in various disciplines and to enhance the teachers’ current knowledge of “best practices” in education. Each cohort’s curriculum is designed to meet that cohort’s primary mission. Successful completion of these programs leads to conferral of the Master’s of Education (M.S.Ed.) or Specialist in Education (Ed.S.) degree.

Applications are being accepted for admission to the Master of Science in Education in Advanced Professional Studies, both tracks: Early Childhood Special Education; Mathematics, Science and Technology for Resource Teachers in Elementary Schools; and Reading. Applicants must meet the admission requirements of the School of Education and Human Development. (See requirements for admission under Admission Requirements or www.education.miami.edu)
SPECIALIST IN EDUCATION (Ed.S)

The Ed.S. degree is available for teachers who wish to increase their proficiency in their chosen field.

Specializations for the degree are:
- Early Childhood Special Education
- Mathematics, Science and Technology for Resource Teachers in Elementary Schools

The program requires 30 additional credits beyond the Masters Degree (minimum) and is individually designed after admission. Some programs for cohorts of teachers feature lock-step curricula. These programs typically combine students pursuing M.S.Ed. degrees with those pursuing Ed.S. degrees. While all students in these programs follow the same curriculum, students pursuing Ed.S. degrees may receive additional or different assignments. Applicants for the Ed.S. must meet the requirements of the School of Education and Human Development. Additional information about the Specialist in Education is provided in a separate section.

Applications are being accepted for admission to the Specialist in Education in Early Childhood Special Education program and Mathematics, Science and Technology for Resource Teachers in Elementary Schools. Applicants must meet the admission requirements of the School of Education and Human Development. (See requirements for admission under Admission Requirements or www.education.miami.edu)

DOCTOR OF PHILOSOPHY (Ph.D)

The University of Miami Department of Teaching and Learning offers a Doctor of Philosophy Degree (Ph.D.) in the following areas of study:

- Language and Literacy Learning in Multilingual Settings,
- Special Education,
- Science, Technology, Engineering and Mathematics

An individual program of study is planned for each doctoral candidate based upon the student’s past academic and experiential background. This program of study is required to be completed by the end of the second semester of enrollment and submitted to the Office of the Senior Associate Dean. The overall goal of the doctoral program is to provide professional development for individuals interested in careers in teacher education and research in institutions of higher education. Applicants for admission to the doctoral program must meet the requirements of the School of Education and Human Development. Additional information about the Doctor of Philosophy is provided in a separate section.

Teaching and Learning Course Listing
DEGREE PROGRAMS

The College of Engineering offers courses of graduate study leading to the degrees of

Master of Science,
Master of Science in Architectural Engineering,
Master of Science in Biomedical Engineering,
Master of Science in Civil Engineering,
Master of Science in Electrical and Computer Engineering,
Master of Science in Industrial Engineering, and
Master of Science in Mechanical Engineering.

Ph.D. degrees are offered in the areas of

1. Biomedical Engineering,
2. Civil Engineering,
3. Electrical and Computer Engineering,
4. Ergonomics and Human Factors
5. Industrial Engineering, and

ADMISSION REQUIREMENTS

Students with an appropriate B.S. degree may seek direct entry to either the M.S. track or Ph.D. track. Admission guidelines for the various tracks are as follows. Please refer to program specific sections of the bulletin for more information with respect to admission and degree requirements.

• B.S. to M.S.:

In engineering, the master’s – not the bachelor’s – degree is the first professional degree, so all engineers should seek to obtain an M.S. degree. In order to facilitate the obtainment of an M.S. degree, the University of Miami (UM) College of Engineering (CoE) offers the M.S. degree through a number of possible venues or entry points, as summarized below. Every one of our M.S. degree programs requires 10 courses or 30 credit hours to complete; this can be typically undertaken in one, 9-month academic year (i.e., by enrolling in 15 credit hours per semester).
General Admission Requirements:

1. A B.S. degree from an accredited program.
2. Typically a cumulative grade point average of 3.0 on a 4.0 scale.
3. Typically a GRE score of 1000 or higher (verbal + quantitative).
4. Typically for international students a TOEFL PBT score of 550 or higher, or a TOEFL iBT score of 80 or higher, or an IELTS score of 6.5 or higher.

Some students may be required to take additional pre-requisite coursework, depending on the nature and content of their B.S. degree. A maximum of 6 credit hours above and beyond those required for a B.S. degree can be transferred into our 30-credit hour M.S. program. Additionally, qualified students may apply for a partial tuition scholarship (which at present is averaging about 25% of the cost). More detailed information can be found in the Prospective Graduate Students section of our website at www.miami.edu/coe.

<table>
<thead>
<tr>
<th>UM Entry Point</th>
<th>Typical Duration</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Freshman Year</td>
<td>4 + 1 years</td>
<td>Students enter UM CoE as a freshman and apply by their junior year to obtain a joint B.S./M.S. degree after 5 years.</td>
</tr>
<tr>
<td>2. Transfer Year</td>
<td>2 + 2 + 1 years</td>
<td>Students enter UM CoE as a transfer from another accredited program after 2 years and apply by their junior year to obtain a joint B.S./M.S. degree after 3 years.</td>
</tr>
<tr>
<td>3. Summer Semester Before M.S.</td>
<td>4’ + 1 year</td>
<td>International students complete their B.S. capstone project at UM CoE as exchange students, then receive their B.S. from their home institution and transition – without leaving U.S. – into the M.S. program, beginning in the Fall semester.</td>
</tr>
<tr>
<td>4. First M.S. Semester On-Campus</td>
<td>1 year</td>
<td>Students enter M.S. program either after receiving a B.S. or after being in the workforce following their B.S. degree.</td>
</tr>
<tr>
<td>5. First M.S. Semester Off-Campus</td>
<td>1.5 to 3 years</td>
<td>Working professionals enter a specially customized M.S. degree program at an off-campus location.</td>
</tr>
<tr>
<td>6. First Semester of An Intensive English Program (IEP)</td>
<td>IEP + 1.5 years (in depth detail of program found on reverse of this page)</td>
<td>International students with a B.S. in engineering who are unable to meet TOEFL/IELTS requirements and have a minimum 550 or higher score on the quantitative section of the GRE may enter into the IEP and, assuming a minimum score of 450 on TOEFL, must take one required M.S. course per IEP semester; if they graduate from IEP and their M.S. course grades average 3.0 or better, they will not be required to retake the GRE before continuing – as a full-time student – in their chosen M.S. program.</td>
</tr>
</tbody>
</table>
University of Miami Bulletin, 2012-2013
Graduate, College of Engineering

- B.S. to Ph.D.: Direct admission to the Ph.D. track by students holding B.S. degrees is limited to students with exceptional credentials. These credentials typically include a minimum GPA of 3.5 on a 4.0 scale and a minimum GRE of 1,200 (verbal plus quantitative). After completion of the Departmental M.S. requirements, students enrolled in the direct B.S. to Ph.D. track may apply for an M.S. degree.

- M.S. to Ph.D.: Criteria for admission into the Ph.D. program for students with an appropriate M.S. degree include a minimum GPA of 3.5 on a 4.0 scale within their M.S. degree program and a minimum GRE of 1,100 (verbal plus quantitative).

The College offers graduate programs leading to degrees in both traditional and interdisciplinary areas of study. The primary focus of the College lies in those areas and problems that cross traditional lines. Given the interdisciplinary nature of programs, flexibility is provided in course selection which allows each student to pursue a program especially tailored to the goals of the individual. Given the strengths of the University, graduate programs are offered in conjunction with other schools or units. These programs include:

- Biomedical Engineering in conjunction with the School of Medicine
- Engineering Management Dual M.S. in Industrial Engineering and M.B.A. in conjunction with the School of Business Administration
- M.S. program in Management of Technology in conjunction with the School of Business Administration
- M.S. in Environmental Health and Safety in conjunction with the School of Medicine.

The M.S. and Ph.D. programs in Interdepartmental Graduate Studies permit, with approval of the Graduate Council, highly qualified students to pursue a privileged individualized program which cuts across disciplinary lines.

Further details on the various College of Engineering areas of specialization are given under the Departmental and Program headings that follow this section.

Students applying for graduate admission to the College should submit three letters of recommendation from individuals familiar with the applicant’s abilities and background.

Students who hold a bachelor’s degree in a field other than their proposed major may be admitted to the graduate program and to candidacy upon completion of appropriate undergraduate deficiency courses, in addition to the regular requirements for the graduate degree.

A student’s overall program is planned by the student and the student’s advisory committee. Requirements for the M.S. thesis and non-thesis options (not available in all areas of specialization) are shown below.

Accepted M.S. applicants can apply and be considered on a competitive basis for partial tuition scholarships. Need based aid also can be awarded, as determined through the financial aid process. A minimum graduate GPA of 3.0 must be maintained in order to maintain satisfactory progress.
Accepted Ph.D. applicants financial assistance is available in the form of fellowships, partial tuition scholarships, teaching and research assistantships, and graduate cooperative assistantships combining study and work assignments with private engineering and architectural firms and government agencies. A minimum graduate GPA of 3.3 must be maintained in order to maintain satisfactory progress.

Financial support is provided predominantly to students pursuing Ph.D. degrees.

For further information, contact David T. Poole, Director of Admission, College of Engineering at dtpoole@miami.edu or 305-284-4773.

DEGREE REQUIREMENTS

Requirements for the Master of Science Degree (thesis option):

- An approved integrated program with a minimum of 30 semester credits with an average grade of B or better and no grade below C.
- At least six (6) course credits must be at the 600-level.
- Six credits of the required 30 must be earned in thesis work.
- An oral examination in defense of the thesis.

Requirements for the Master of Science Degree (non-thesis option):

- An approved integrated program with a minimum of 30 semester credits with an average grade of B or better and no grade below C.
- At least twelve (12) of the course credits must be at the 600 level.
- In most departments a 3-credit graduating project is required.

Requirements for the Doctor of Philosophy Degree:

- The programs leading to the degree of Doctor of Philosophy comply in full with the regulations of the Graduate School concerning admission, residence requirements, qualifying and final examinations and dissertation.
- Applicants for admission to the Ph.D. program will be expected to have superior records in their M.S. and B.S. degree programs, well above average scores on the Graduate Record Examination, and strong letters of recommendation.
- At least 18 credits in courses must be taken beyond the requirements for the M.S. degree of which 6 credits must be at the 600 level.
- All candidates for the doctorate are expected to complete an appropriate integrated program of studies in preparation for the comprehensive Qualifying Examination.
- Students are expected to take their qualifying exams during the first year of enrollment. Admission to candidacy across College of Engineering Departments includes passing the qualifying exam and successful defense of a proposal for research.
Minimum of one year beyond admission to candidacy is usually necessary for the completion of an acceptable dissertation (12 credits or more), whereupon the student is then expected to defend their Ph.D. thesis during the Final Oral Examination.

Departments may have requirements in addition to the above general requirements for their own graduate programs.

For further information, contact Office of Admission, College of Engineering (David Poole, dtpoole@miami.edu or 305-284-4773).

POSTGRADUATE CERTIFICATE PROGRAM

A Postgraduate Certificate Program is available requiring the completion of a minimum of 15 semester hours of individually planned advanced course work in an area of engineering specialization, or interdisciplinary study.

Course sequences culminate at an advanced level, but may begin at a basic level if a new area of specialization is to be undertaken.

The Program must be completed with a grade average of at least C, within a period of five calendar years from the date of enrollment.

No transfer credits will be accepted. International students requiring a student visa must be in a degree program, and cannot obtain a student visa for the Certificate Program; but international students with certain other types of visas may enroll in the Program.

Basic admission requirement for the Program is a bachelor’s degree in a recognized field of engineering or registration as a Professional Engineer by examination.

Students demonstrating marked ability in the Program may be encouraged to apply for admission to study for the Master’s Degree, and may apply up to six credits toward the M.S. degree.

Customized Engineering Master’s Program

The College of Engineering at the University of Miami has a unique graduate admission option for students wishing to be accepted into graduate studies to pursue a Master of Science degree in Engineering, but who are unable to demonstrate acceptable levels of English proficiency at the time of their application for admission. The IEP+ 1.5 Year Program is focused on helping non-native English applicants to obtain a Master of Science degree in Engineering.

Prospective students must complete and submit an application for graduate admission into the College of Engineering, providing all supporting documents as outlined in our graduate admission application and meet the following criteria:

1. Applicants must be academically admissible into graduate studies with appropriate academic credentials. They must have a Bachelor of Science degree in Engineering, or its equivalent, or be a candidate for one at the time of application.
2. Applicants must score a 550 or higher on the quantitative portion of the GRE.
3. Applicants must score a 450 or higher on TOEFL PBT (paper based test), or a 133 on TOEFL CBT (computer based test), or 45 on TOEFL iBT (internet based test) or 4.5 on ILETS (International English Language Testing System).

Students who are accepted under these criteria will enroll in our Intensive English Program (IEP) for a designated time, typically a year. The actual length of time a student will spend in IEP will be determined through a placement exam given once the student has arrived on the University of Miami Coral Gables campus. Students will also be required to enroll in a minimum of one graduate engineering course each semester while enrolled in IEP. Selection of these courses will be done after academic advising has taken place with our Associate Dean for Academics for students in this program.

Full-time enrollment in the M.S. portion of the IEP/M.S. Program will commence when the student has successfully completed Level Five of IEP and has completed two or more approved engineering courses, with a cumulative GPA of 3.0 or higher. Depending on the student’s background, the M.S. degree will require the taking of 30 or more credit hours – corresponding to 10 or more 3-credit courses – and the achievement of a cumulative GPA of 3.0 or higher in the taken courses. Assuming a 30-credit M.S. program, it is anticipated that the IEP and 6 credit hours will be completed in the first year, 18 credit hours the second year (9 credit hours in the Fall and 9 credit hours in the Spring) and a minimum of 6 credit hours in Fall of the third year; thus, the duration is expected to be IEP+1.5 years.

The fixed cost per student, entering in the Fall 2011 semester, for this specially designed IEP + 1.5 year IEP/M.S. program is $75,000 (U.S.D.). This cost covers the following: tuition (IEP and up to 36 graduate credit hours), Activity fee, Athletic fee, University fee and Wellness Center fee. Billing will be divided into three annual payments as follows: $35,000 at the beginning of year one, $25,000 at the beginning of year two and $15,000 at the beginning of year three. If you have any questions about the CEM Program, please contact David T. Poole, Director of Admission, College of Engineering at dtpoole@miami.edu or 305-284-4773 or Associate Dean for Academics, Dr. Shihab Asfour at sasfour@miami.edu.

**Ph.D. Course Exchange with Florida International University**

University of Miami Ph.D. students are eligible to enroll in courses at Florida International University for a maximum of 6 credits. Enrollment in FIU courses requires approval through the student’s program of study committee. See FIU/UM Ph.D. exchange section of the Graduate School section of the bulletin for more details.
BIOMEDICAL ENGINEERING - Dept. Code: BME

DEGREE PROGRAMS
The Department of Biomedical Engineering offers graduate programs leading to the degrees of Master of Science (thesis or non-thesis option) and Doctor of Philosophy in Biomedical Engineering. A 5-year BS/MS option is available for qualified undergraduate students enrolled within the Department.

AREAS OF RESEARCH
The areas of research in Biomedical Engineering include:
1. Biomedical instrumentation and devices
2. Medical imaging
3. Applications of computers to diagnostic and therapeutic systems
4. Biomechanics, biofluid dynamics, hemodynamics
5. Biomaterials, Tissue and cellular engineering
6. Biomedical signal and image processing
7. Rehabilitation and neural engineering
8. Brain-computer interface
9. Biomedical optics and lasers
10. Medical physics and engineering

ADMISSION REQUIREMENTS
A. The Department of Biomedical Engineering uses the same general graduate admission requirements as the College of Engineering.
B. Students who hold a Bachelor's degree in a field other than engineering may be admitted to the graduate program and to candidacy upon completion of appropriate undergraduate courses, in addition to the regular requirements for the graduate degree.

MASTER OF SCIENCE
A. The Master of Science degree offers the graduate student an opportunity to obtain advanced training in selected areas of biomedical engineering and to begin independent research.
B. General requirements for the M.S. degree are listed in this Bulletin under Engineering and under Master's Degree-General.
C. Both a 30-credit thesis option and a 30 credit non-thesis option are available.
D. There is also a 5-year BS/MS option available for qualified undergraduate students enrolled within the Department.
E. The department admits four types of students to its MS program:
1. Students with BS degrees in Biomedical Engineering or similar engineering fields
2. Students with BS degrees in Electrical, Computer, Mechanical, Chemical, or similar engineering fields
3. Students with BS degrees in Physics, Mathematics, Computer Science, Chemistry, Biology or similar fields
4. Students with MD or similar degrees

F. Students in the last two groups are generally given conditional admission and required to take additional undergraduate courses in engineering, mathematics and science depending on their previous course work as decided by the graduate program director and the designated advisor.

G. There are three paths to earn a Master of Science degree in Biomedical Engineering:

1. The Thesis Option requires a minimum of 30 credits beyond the BS degree. These must include a minimum of 6 thesis credits (BME 710) and the completion of at least two appropriate courses at the 600 level.
2. The Non-Thesis Option requires a minimum of 30 credits beyond the BS degree. These must include at least 3 credits for an independent design or research project for which the student enrolls in BME 605. In addition, at least three appropriate courses at the 600 level must be completed.
3. The BS/MS Dual degree Program (see separate section below).

H. The student’s overall graduate program is planned by the student, advisor, graduate program director and the thesis committee (for the thesis option).

1. The thesis committee consists of a minimum of 3 members.
2. Two members, including the chair of the committee, shall be faculty members from the BME Department (primary or secondary), and one member must be from outside the Department.
3. Outside members of the thesis committee can include part-time faculty that teach within the Department.
4. One of the committee members must be a member of the Graduate Faculty.

I. The three courses of the Unified Medical Sciences sequence (BME 501, 502 and 503) were designed to apprise the engineer of the basic knowledge in the life sciences necessary to work in the broad field of biomedical engineering.

1. MS Students coming from traditional engineering field with no biology/medicine backgrounds are required to complete all of the three Unified Medical Sciences courses.
2. Other MS students are required to take at least two of the three courses unless the student holds a degree in medicine (MD, DO or equivalent) or an advanced degree (or its equivalent) in the life sciences.
3. Each such exception requires the approval of the department’s faculty for the course of concern.
BS/MS 5-YEAR PROGRAM

This program is available only to qualified undergraduate students enrolled within the Department as described in the Undergraduate Bulletin.

A. This program permits students to receive a baccalaureate degree (BSBE) and a Master of Science (MS) degree in five years.

B. The two degrees are awarded simultaneously when the combined requirements have been met for both degrees.

C. Qualified students who want to be enrolled in this program must apply before the end of their junior year and meet all pertinent graduate school and College of Engineering requirements.

D. In lieu of the 6-credit thesis requirement, the participants complete either one significant design project or two shorter duration projects by registering for BME 605 and 606.

E. The design project(s) is (are) monitored by at least two mentors, one of the mentors must be a member of the primary faculty in the department.

F. The project(s) is (are) completed by the acceptance of a verbal presentation and a written report by the student’s mentors.

DOCTOR OF PHILOSOPHY

A. The goal of the PhD program in Biomedical Engineering at the University of Miami is to prepare graduates for careers in academia, industrial research and development, or government. The program is designed to train students for advanced independent research and technical innovation in biomedical engineering.

B. The general requirements for award of the Doctor of Philosophy degree include:

1. Completion of a minimum of 60 credits beyond the Bachelor of Science degree.
2. Satisfactory completion of a qualifying examination.
3. The submission, oral defense, and approval of a dissertation proposal.
4. The submission and oral defense and approval of a dissertation.

There are no foreign language competency requirements for the PhD in biomedical engineering.

C. The requirements for admission to the PhD program in biomedical engineering usually include:

1. In general, the department admits three types of students to its PhD program:
   a) Students with MS degrees in Biomedical Engineering or related science and engineering fields.
   b) Students with MD degrees with undergraduate degrees in sciences or engineering.
   c) Highly qualified students with BS degrees in engineering or sciences (direct BS to PhD track).

2. The general requirements for admission of BS students to the doctoral degree program are consistent with the admission requirements of the College of Engineering.
3. Students in M.S. thesis or non-thesis tracks who wish to pursue a doctoral degree can transfer to the doctoral degree program without completing a thesis or project under the following general requirements:
   a) A letter of support by a faculty member who agrees to serve as the student’s Ph.D. dissertation advisor.
   b) Completion of an application for admission to the PhD program, which will be reviewed by the Department’s Graduate Admissions Committee, using the standard admission criteria for the doctoral program.

4. Regulations concerning admission, course requirements, residence requirements, qualifying and final examinations, and dissertation are listed in this Bulletin under Engineering and Doctor of Philosophy.

D. The doctoral program in biomedical engineering requires each student to pass a departmental qualifying screening examination.

1. The screening examination consists of three written examinations on each of the following broad subjects:
   a) basic engineering;
   b) applied mathematics and computer science; and
   c) applied physiology and medical science.

2. These examinations are usually offered once or twice each year.

3. The examination must be taken the first time it is scheduled after completion of the first two semesters.

4. A student may repeat once any or all parts of the examination where the results were found unsatisfactory.

5. Students admitted to the doctoral program with a BS degree that do not pass the qualifying examination may complete the MS degree.

E. Following the successful completion of the screening examination, a PhD Supervisory Committee is appointed by the Chairperson of the Department of Biomedical Engineering. The role of the Supervisory Committee is to administer the dissertation proposal, and to make up any additional written or oral examination deemed necessary to complete the qualifying examination.

1. The supervisory committee is composed of a minimum of 5 members.

2. Three members, including the chair, shall be members of the Graduate Faculty, and one member shall be from outside the Department.

3. A minimum of three members, including the chair of the committee, must be primary faculty members from the BME Department.

4. A research mentor who is not a Primary Faculty member of the Department of Biomedical Engineering, can serve as Co-Chair of the Supervisory Committee, together with a second Co-Chair who shall be a member of the primary faculty of the Department of Biomedical Engineering.

5. A written dissertation proposal is submitted along with an oral presentation to the supervisory committee.
6. Acceptance of the dissertation proposal in combination with other examinations as determined by the committee to assure the qualifications of the student for the doctorate leads to candidacy for the Ph.D.

F. When the student is admitted to candidacy, a dissertation committee is formed.
   1. The Dissertation Committee is nominated by the Department, and is approved and appointed by the Dean of the Graduate School.
   2. In the Department of Biomedical Engineering, the Dissertation Committee is generally the same as the Supervisory Committee, but it may also be a committee formed anew to undertake the duties of advising and passing upon the dissertation.
   3. The composition of the Dissertation Committee is subject to the same rules as for the Supervisory Committee (see above).
   4. The duties of the Dissertation Committee are:
      a) to consult with and to advise students on their research;
      b) to meet, at intervals, to review progress and expected results;
      c) to read and comment upon the draft dissertation;
      d) to meet, when the dissertation is completed, to conduct the final oral examination and to satisfy itself that the dissertation is a contribution to knowledge and that it is written in lucid and correct English and submitted in approved form.

G. Successful defense of the dissertation leads to the award of the PhD degree.

H. All students in the BME Doctor of Philosophy program are required to complete the following course or credit requirements:
   1. At least two of the following three courses: BME 501, BME 502, BME 503.
      a. Students, who have completed these courses or similar coursework in their previous MS programs, may substitute technical electives for this requirement.
      b. Students in the direct BS to PhD track and students with no prior exposure to biology/medicine are required to complete all three courses
      c. This requirement can only be waived for students holding MD degrees.
   2. A zero-credit Biomedical Engineering Seminar course (BME 680). This requirement is not waived, even if the student has taken this course in his/her MS program.
   3. Students admitted with an MS degree must complete at least 18 credits of graduate level course work followed by at least 12 credits of dissertation work (BME 730 before admission to candidacy or BME 740 after admission to candidacy). A minimum of 6 course credits must be at the 600 level.
   4. Students admitted with a BS degree must complete at least 42 credits of graduate level course work followed by at least 18 credits of dissertation work (BME 730 before admission to candidacy or BME 740 after admission to candidacy). A minimum of 12 course credits must be at the 600 level.
• 500 level courses are open to advanced undergraduates and to graduate students; 600 level courses are open only to graduate students and seniors with graduate standing.

Biomedical Engineering Course Listing
CIVIL, ARCHITECTURAL, AND ENVIRONMENTAL ENGINEERING -
Dept. Code: CAE

DEGREE PROGRAMS

The Department of Civil, Architectural, and Environmental Engineering offers graduate programs leading to the degrees of:

- Master of Science in Architectural Engineering
- Master of Science in Civil Engineering
- Doctor of Philosophy in Civil Engineering

The specialty areas of study in Civil Engineering include:

- structural engineering and structural materials
- environmental engineering
- water-resources engineering

The specialty areas of study in Architectural Engineering include:

- integrated building systems
- MEP systems

In all fields of specialization, up to one-half of the required course work for the selected degree may be taken outside of the Department.

ADMISSION REQUIREMENTS

All students applying to the graduate program are required to submit GRE scores and three letters of recommendation. Admission criteria are described under Colleges of Engineering – Graduate Admission Requirements.

A. International students should consult the section on admissions.
B. Students who hold a bachelor’s degree in a field other than their proposed major may be admitted to the graduate program and to candidacy upon completion of appropriate undergraduate deficiency courses, in addition to the regular requirements for the graduate degree.

MASTER OF SCIENCE

A. Requirements for the M.S. degree are listed in this Bulletin under Engineering and under Master’s Degree General.
B. A total of 6 credits of transfer and/or exchange coursework not counted towards the student’s bachelor’s degree may be taken at another institution and used to satisfy requirements for the M.S. degree.
C. Both a thesis option and a non-thesis option are available.
D. There is also a 5-year B.S./M.S. option available for qualified undergraduate students enrolled within the Department.
E. Of 30 required credits, up to 6 may be thesis research. At least 12 credits must be at the 600 level, of which up to 6 credits can be thesis research, independent study, or, for 5-year BS-MS candidates, Capstone Design.

F. The student and an advisory committee plan the student’s overall program.
   1. The advisory committee consists of a minimum of 3 members.
   2. The chair of the committee shall be a full-time faculty member from the CAE Department, one member must be from outside the Department and hold a Ph.D., and one member other than the chair must be either a full-time or part-time member of the Department.
   3. One of the committee members must be a member of the Graduate Faculty.

DOCTOR OF PHILOSOPHY

A. Regulations concerning admission, course requirements, residence requirements, qualifying and final examinations, and dissertation are listed in this Bulletin under Engineering and Doctor of Philosophy.

B. A total of 6 credits of transfer and/or exchange coursework beyond those counted towards the student’s bachelor’s and master’s degrees may be taken at another institution and used to satisfy requirements for the Ph.D. degree. Students entering without a previous master’s degree may use a total of 12 such credits to satisfy requirements for the Ph.D.

C. For students with a previous master’s degree, 18 credits of coursework are required, six of which must be at the 600 level in courses other than independent study. For students entering without a previous master’s degree, 42 credits of coursework are required, 12 of which must be at the 600 level in courses other than independent study.

D. The student and a supervisory committee plan the student’s overall program.

E. A separate dissertation committee may be formed to oversee the progress of the dissertation but, in most instances, the student’s supervisory committee also serves as the dissertation committee.

F. The supervisory/dissertation committee shall be composed of a minimum of 4 members.
   1. Three members, including the chair, shall be members of the Graduate Faculty, and one member shall be from outside the Department and hold a Ph.D.
   2. A minimum of two members, including the chair of the committee, must be full-time members from the CAE Department.

RESEARCH OPPORTUNITIES - CIVIL/ARCHITECTURAL ENGINEERING

- Current research activities in the Department include properties of concrete materials, such as cellular concrete, composite structural systems, fiber-reinforced concrete, modeling and simulation of engineering materials, multi-scale modeling of materials, fracture mechanics, structural steel behavior, structural health monitoring, structural repair and rehabilitation, energy, indoor air quality, heating, ventilating and air conditioning (HVAC), building material emissions and sorption, air cleaning using photocatalytic or other oxidizing technologies, environmentally compatible construction materials and systems, life-cycle building systems integration, and sustainable affordable housing.
RESEARCH OPPORTUNITIES - ENVIRONMENTAL ENGINEERING

- Current research activities in the Department include development of new physicochemical water and wastewater treatment processes, potable wastewater reuse, solid and hazardous waste management, health and environmental risk analysis, environmental/economic planning for sustainable development, hazardous waste remediation, environmental health studies, water quality studies, ground-water, surface-water, and contaminant-transport processes, hydrologic processes, water resources planning and management, and water policy.

[Civil, Architectural and Environmental Engineering Course Listing]
Current research interests of the faculty include

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<thead>
<tr>
<th>Machine Learning and Artificial Intelligence</th>
<th>Image Processing and Computer Vision</th>
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<tr>
<td>Biometrics</td>
<td>Underwater imaging and vision</td>
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<td>Bioinformatics and Computational Biology</td>
<td>Grid Computing</td>
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<tr>
<td>Networks and Information Security</td>
<td>Communications</td>
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<td>Network Congestion Control</td>
<td>Multimedia Systems and Networks</td>
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<td>Databases</td>
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<td>Data Mining</td>
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<td>Evidence and Data Fusion</td>
<td>Learning from Data</td>
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<tr>
<td>Signal Processing and Filtering</td>
<td>Decision Modeling</td>
</tr>
<tr>
<td>Acoustics, Speech, and Audio Processing</td>
<td>Systems Engineering</td>
</tr>
</tbody>
</table>

**DEGREE PROGRAMS**

**I. MASTER OF SCIENCE IN ELECTRICAL AND COMPUTER ENGINEERING**

A. The Electrical and Computer Engineering Department offers the Degree of Master of Science in Electrical and Computer Engineering with 24 course credits and 6 thesis credits or 30 course credits and no thesis.

**II. THE FIVE-YEAR B.S.E.E. - M.S.E.C.E DUAL DEGREE PROGRAM**

A. This is a structured and integrated program with a minimum of 158 approved credits including two required courses EEN 615 & 616 as well as 12 Elective courses defined as follows:

1. At least one Analysis elective courses;
2. At least two Computer Engineering elective courses;
3. At least six EEN Elective Courses;
4. An additional three EEN or Technical Elective courses;
   
   Elective courses are to be selected in consultation with the advisor.

**III. THE FIVE-YEAR B.S.CP.E. - M.S.E.C.E DUAL DEGREE PROGRAM:**

A. This Dual Degree Program requires ten additional courses and replaces three technical elective courses as well as one senior design course currently required under the B.S.Cp.E. Degree.

These fourteen courses are specified as follows:

1. Three required courses EEN 368, 615, 616
2. select two hardware courses from: EEN 532, 542, 614
3. select two software courses from: EEN 511, 512, 513, 537, 572
4. select four courses from the following:
IV.  THE FIVE-YEAR B.S.I.T.S.E. - M.S.E.C.E DUAL DEGREE PROGRAM:
   A. This is a structured and integrated program with a minimum of 159 approved credits. These include:
      1. Thirty credits of required courses as follows:
         EEN 307, 315, 316, 336, 404, 454/455, 521, 562, 563, 568, 615, 616;
      2. Fifteen credits selected from the following elective courses:
         a) Six credits of EEN elective courses selected from the following list: EEN 511, 512, 513, 514, 532, 536, 538, 540, 542, 553, 562, 563, 564, 565, 614, 638, 671
         b) Nine credits of Technical Electives selected in consultation with the academic advisor

V.  DOCTOR OF PHILOSOPHY
   A. The program leading to the degree of Doctor of Philosophy complies in full with the requirements of the Graduate School concerning admission, residence requirements, qualifying examinations and the dissertation.
   B. Course requirements for the Ph.D. are described under the College of Engineering section.
   C. There is no foreign language requirement.
   D. The Ph.D. program in the Department will concentrate on a variety of emphasis areas for study and research.

500-level courses are open to advanced undergraduates and to graduate students; 600 level courses are open only to graduate students.

Electrical and Computer Engineering Course Listing
INDUSTRIAL ENGINEERING - Dept. Code: IEN

DEGREE PROGRAMS

I. Department Mission Statement
The Department of Industrial Engineering mission is to provide contemporary and relevant industrial and systems engineering education and research; impart knowledge and skills necessary to design and to improve a variety of manufacturing and service processes; promote life-long learning; and contribute to emerging societal needs.

II. MASTER OF SCIENCE
A. The Master of Science degree in Industrial Engineering includes the following areas of concentration:
   1. Engineering Management
   2. Ergonomics and Human Factors
   3. Health Care Systems
   4. Management of Technology
   5. Manufacturing Engineering
   6. Occupational Health and Safety
   7. Operations Research
   8. Productivity Engineering
   9. Quality
B. Students (other than University of Miami graduates) applying for graduate admission to the College should submit three letters of recommendation from individuals familiar with the applicant’s abilities and background. Students who hold a bachelor’s degree in a field other than Industrial Engineering may be admitted to the graduate program and to candidacy upon completion of appropriate undergraduate deficiency courses, in addition to the regular requirements for the graduate degree. A student’s overall program is planned by the student and the Graduate Advisor.
C. Requirements for the Master of Science Degree (both thesis and non-thesis option):
   1. An approved integrated program with a minimum of 30 semester credits with a 3.0 average or better on all credits attempted and no single grade below “C” at the University of Miami while a graduate student.
   2. At least twelve (12) course credits must be at the 600 level.

THESIS OPTION (30 Credits)
5 Common Core Courses  15 Credits
3 Elective Courses  9 Credits
Master’s Thesis (IEN 710)  6 Credits

TOTAL 30 Credits
NON-THESIS OPTION (30 Credits)

5 Common Core Courses  15 Credits
4 Elective Courses       12 Credits
Master's Project (IEN 694)  3 Credits

**TOTAL 30 Credits**

(Note: All courses are 3 credit hours unless otherwise indicated)

COMMON CORE COURSES

IEN 612 - Design of Experiments
IEN 642 – Linear Programming and Extensions (or advanced level Operations Research course)
IEN 657 - Ergonomics and Occupational Biomechanics (or advanced level Human Factors course)
IEN 664 - Supply Chain Management or IEN 572 Management of Technological Innovation (or advanced level Management Course)
IEN 665 - Advanced Production Systems

Notes:

i. In addition to the above required courses, the student will have to take other graduate level elective courses to fulfill the degree requirements. A list of approved electives is maintained by the Graduate Advisor in the Department of Industrial Engineering. Substitution of courses is allowed, but must be approved by the Graduate Advisor and the Department Chairman.

ii. 500-level courses are open to advanced undergraduates and to graduate students; 600-level courses are open only to graduate students.

iii. 500-level and 600-level courses are also open to qualified graduate students majoring in other disciplines.

D. The Department of Industrial Engineering offers a Five-Year Bachelor of Science in Industrial Engineering and Master of Science in Industrial Engineering Program (BSIE/MSIE Program).

1. This program is specifically designed for those students who want to pursue their graduate study as soon as they complete their undergraduate study in Industrial Engineering.

2. The special conditions for this Five-Year BSIE/MSIE Program are as follows:
   a) The student must declare his/her intent to participate before the end of their Junior year by submitting an official application to the department graduate committee for admission into the MSIE portion of the program. Exceptions to this rule must be approved by the department faculty.
b) A student wishing to withdraw from the Five-Year Program without the MSIE degree must complete all the requirements for the BSIE program, including the IEN 494 Senior Project in order to get his/her BSIE degree.

c) To qualify for the MSIE degree, the student must meet all the pertinent Graduate School requirements, including an acceptable score on the GRE (Graduate Record Examination) and a minimum of 3.0 GPA.

d) The student is awarded both the BSIE and MSIE degrees at the end of the fifth year when all requirements are satisfied.

E. An interdisciplinary M.S. degree program in Environmental Health and Safety and an M.S. degree program in Occupational Ergonomics and Safety are offered through the Department of Industrial Engineering in collaboration with the School of Medicine. These programs of study are individually structured to fit the student’s interests and career objectives.

F. The Department of Industrial Engineering, in cooperation with the School of Business Administration, offers three programs:
   1. a dual MSIE/MBA weekend executive program,
   2. an M.S. in Management of Technology,
   3. an M.S. in Quality Management.
For more details on these programs, contact the Department of Industrial Engineering.

III. DOCTOR OF PHILOSOPHY
   A. The Department offers a Ph.D. in Industrial Engineering for students with a background in engineering and a Ph.D. in Ergonomics and Human Factors for students with a background in engineering and/or related sciences.

   B. General requirements for award of the Doctor of Philosophy degree include:
      1. Sixty credits beyond the baccalaureate degree are the minimum requirement for the Ph.D.
      2. At least 24 must have been taken in residence at the University of Miami. A minimum of 12 dissertation credits must be taken.

   C. Course work requirements depend on the student’s background, and are established by the Graduate Advisor and the Department Chairman.

   D. To maintain status as a graduate student, registration in each fall and spring semester is required. Otherwise, admission lapses and permission to re-enter must be granted.

   E. Once a student has completed all course and required research credits, he or she must enroll in "Research in Residence" status until the degree has been granted. "Research in Residence" status is considered full time enrollment. Time restrictions on obtaining degrees will be strictly enforced and can be waived only by the Dean of the Graduate School.

   F. A written qualifying examination is to be taken by each doctoral degree candidate during the first year of graduate work. The department may specify that the student must take an oral examination as well. In those cases, normally, the student shall pass the written examination before the oral examination is conducted. Upon completion of the examination process, the Graduate Advisor notifies the
Department Chairman that the student has passed or failed the examination. A student who fails the examination may be permitted to retake it, with the permission of the Graduate Advisor and the Chairman. Qualifying examinations normally will not be given during the summer months. The applicant must hold a 3.0 average on all credits attempted with no single grade below "C" at the University of Miami while a graduate student.

G. Each student in the Ph.D. program in Industrial Engineering has to take and pass 5 qualifying exams in the following areas: Management of Technology, Ergonomics & Biomechanics, Operations Research, Manufacturing Engineering, and Statistics & Regression analysis.

H. Each student in Ph.D. program in Ergonomics and Human Factors has to take and pass 5 qualifying exams in the following areas: Ergonomics and Human Factors, Industrial Hygiene, Safety Engineering, Biomechanics, and Statistics & Regression analysis

I. Upon completing the course requirements, passing the qualifying exams, and successfully defending the Ph.D. proposal, the student is eligible for admission to the Ph.D. candidacy.

J. Upon passing the qualifying exams, the student in consultation with his/her selected Ph.D. Dissertation committee chair will decide on the dissertation committee members. The Dissertation committee will consist of not less than four members, three from the Department’s graduate faculty, one from outside the Department. The chairman has to be a member of the graduate faculty. The duties of the Dissertation Committee are:

1. To consult with and to advise students on their research.
2. To meet, at intervals, to review progress and expected results.
3. To read and comment upon the draft dissertation.
4. To meet, when the dissertation is completed, to conduct the final oral examination and to satisfy itself that the dissertation is a contribution to knowledge and that it is written in lucid and correct English and submitted in approved form.
5. The candidate is well advised to have a final acceptable typescript of the dissertation in the hands of each member of his/her committee at a time reasonably in advance of the final defense of the work.

K. There are no foreign language requirements for the Ph.D. degree.

Industrial Engineering Course Listing
MECHANICAL AND AEROSPACE ENGINEERING - Dept. Code: MAE

DEGREE PROGRAMS

I. The Department of Mechanical and Aerospace Engineering offers courses and provides facilities for two programs of graduate study and research in Mechanical Engineering, leading to the degrees of

• Master of Science
• Doctor of Philosophy

A. The program of study must reflect the importance of underlying principles of the physical sciences and mathematical analysis to all phases of modern mechanical engineering.

B. Within the department, specializations are available in

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<tr>
<th>Fluid Mechanics</th>
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<tr>
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<td>Environmental Engineering</td>
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<td>Composite Materials</td>
<td>Aerodynamics and CFD</td>
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<td>Optimization and Reliability</td>
<td>Nano-Bio-Systems</td>
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<tr>
<td>Nano Mechanics</td>
<td>Fuel Cells</td>
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C. It is expected that each graduate student will indicate early in his/her graduate work (within the first year), the particular area in which he/she intends to concentrate his/her efforts as well as the faculty advisor for dissertation.

II. MASTER OF SCIENCE

A. One academic year, or equivalent, spent in full time graduate study will be the minimum time necessary for a student to fulfill the requirements for the degree of Master of Science in Mechanical Engineering.

B. General requirements for the M.S. degree are listed under the Engineering heading of this section and in the general information of this Bulletin.

C. Students applying for acceptance to degree status must comply with the general requirements of the Graduate School.

D. Both a 30 credit hour thesis option and a 30 credit hour non-thesis option are available.

1. The student taking the Thesis Option must take an oral examination in defense of the thesis.

2. The student taking the Non-Thesis Option must complete a 3-credit Graduation Project at the end of the course program.

3. The Master of Science Degree in Mechanical Engineering (Management Option) can only be taken under the Non-Thesis Option.

   a) This degree specialization combines 15 credits selected from graduate business courses with 15 credits in a graduate engineering area of concentration.

   b) An undergraduate degree in engineering is required.
III. DOCTOR OF PHILOSOPHY
   A. The program in the Department of Mechanical and Aerospace Engineering leading to the degree of Doctor of Philosophy complies in full with the regulations of the Graduate School concerning admission, residence requirements, qualifying and final examinations and the dissertation.
   B. There is no foreign language requirement.
   C. All candidates for the Ph.D. degree are expected to complete an integrated program of studies in mechanical engineering, mathematics, physics and/or chemistry in preparation for the Qualifying Examination.
   D. A qualifying examination is to be taken by each doctoral degree student within the first year. In the qualifying examination, the student is expected to demonstrate his/her competence in certain basic courses appropriate to modern mechanical engineering to the satisfaction of the department. A Ph.D. student will be admitted to candidacy after passing the qualifying examination as well as the defense of dissertation proposal.
   E. One or two years beyond admittance to candidacy will usually be found necessary for the completion of an acceptable dissertation, whereupon the student will be required to pass the Final Oral Defense of the Dissertation.
   F. The candidate may, if he/she so desires, pursue for his/her dissertation an investigation in connection with any of the research projects in progress in the Mechanical and Aerospace Engineering Department or, in the case of interdisciplinary programs, in other Colleges/Schools such as the School of Marine and Atmospheric Science or the Medical School.

500 level courses are open to advanced undergraduates and to graduate students; 600 level courses are open only to graduate students.

IV. CLEAN ENERGY RESEARCH INSTITUTE
   A. The Clean Energy Research Institute in the Department of Mechanical and Aerospace Engineering acts as the focal point of energy and environment related activities in the College of Engineering.
   B. Its goals are: to conduct research and to generate research proposals to investigate energy and environmental problems; to organize seminars, workshops and conferences using researchers within and without the University; to assemble, compile, publish and disseminate information on every aspect of energy and environmental problems; and to cooperate with other organs of the University, other academic institutions, government and private organizations in connection with the above listed activities.
   C. The current activities of the Institute include research into hydrogen as a clean, inexhaustible synthetic fuel, environmental damage caused by fossil fuels, global warming and its remediation, instabilities in boiling systems, solar cooling and heating, hybrid solar collectors, remote sensing applied to energy related problems and solar energy, system optimization and reliability of solar and wind energy systems, and organization of national and international conferences and symposia on energy and environmental problems.
V. FLUIDS AND THERMAL SCIENCES LABORATORY
A. The Fluids and Thermal Science Laboratory provides such equipment as a wind tunnel producing wind velocities of 150mph allowing opportunity to study the principles of aerodynamics, the effects of a hurricane, and air pollution modeling. Pressure and velocity measurements, renewable energy by wind power are simulated in this laboratory.
B. Research includes an open water channel that allows basic work on oil booms and boom arrangements to be done.
C. Additionally, air pollution research is conducted through sampling trains and equipment for stack sampling.
D. This laboratory provides research opportunities for both undergraduate and graduate students.

VI. INTERNAL COMBUSTION ENGINES LABORATORY
A. Funded continuously since the 1970s, the Internal Combustion Engines Laboratory is a well-established research laboratory internationally known for its work in designing and testing engines for use with conventional and alternative fuels.
B. Graduate and undergraduate students alike have worked with faculty on numerous projects.
C. The laboratory focuses on issues of performance, energy conservation (fuel economy) and environmental impact (exhaust emissions).
D. Faculty research has received international recognition, and students’ research have been presented in numerous publications and at conferences sponsored by industry, government and academic venues.

VII. DORGAN SOLAR and Fuel Cells ENERGY LABORATORY
A. The Dorgan Solar Energy Laboratory is equipped with a photovoltaic system, a solar air-conditioning system, a solar domestic hot water system, a solar-assisted heat pump system, and a meteorological data gathering station.
B. Both graduate and undergraduate students have worked with faculty on various research projects.
C. In addition to solar energy related projects, current research activities also include research on Hydrogen-Oxygen fuel cells and other energy and environment-related topics.

VIII. COMPUTATIONAL FLUID DYNAMICS LABORATORY
A. The CFD lab is equipped with a Beowulf PC cluster parallel computing system with 16 Pentium 4 Xeon 1.7G processors.
B. Current interests are mainly in the area of aerospace propulsion systems including turbomachinery unsteady aerodynamics, fluid-structure interaction, turbulence simulation, design optimization, rocket engine turbopump flow, CFD algorithm/code development, etc.

Mechanical and Aerospace Engineering Course Listing
OCEAN ENGINEERING/APPLIED MARINE PHYSICS

I. Ocean Engineering concentrates on problems associated with the interaction of the ocean and the works of man.
   A. The ocean engineer combines competence as an engineer with both a practical experience in and theoretical understanding of the ocean.
   B. The Ocean Engineering program, offered jointly with the Rosenstiel School of Marine and Atmospheric Science, is intended to lay the foundation of this competence, experience and understanding.
   C. The areas of faculty specialization in this program include coastal engineering, off-shore engineering, underwater acoustics, ocean measurements, marine geotechnics, and naval hydrodynamics.

II. The Master of Science degree in ocean engineering is offered jointly with the Rosenstiel School of Marine and Atmospheric Science.
   A. In addition, Master of Science and Doctor of Philosophy degrees in applied marine physics are offered by the Rosenstiel School of Marine and Atmospheric Science.
   B. See APPLIED MARINE PHYSICS/OCEAN ENGINEERING under RSMAS elsewhere in this Bulletin for information on the applied marine physics.

III. An approved interdisciplinary program is required for the M.S. degree in ocean engineering which consists of a minimum of 30 credits at the graduate level with an average grade of B or better and no grade below C.
   A. The 30 credits are divided among 24 credits in courses and six credits for thesis research.
   B. At least nine of the required credits must be 600 level courses.
   500 level courses are open to advanced undergraduates and to graduate students; 600 level courses are open only to graduate students.
INTRODUCTION

The Rosenstiel School of Marine and Atmospheric Science was established in 1943 as the Marine Laboratory of the University of Miami. It has grown from its modest beginnings in a boathouse to be one of the nation’s leading institutions for oceanographic and atmospheric research and education.

Originally a tropical marine biological facility, the Marine Laboratory initiated a program of studies leading to the Master of Science degree in 1949. In 1953, laboratory and classroom buildings were constructed on the School’s present campus on Virginia Key, and in the late fifties, the Marine Laboratory expanded its staff and developed its oceanographic capabilities in response to the increased interest in scientific research in the United States. It became the Institute of Marine Science in 1961. Ocean-going research vessels were acquired, and additional buildings were constructed to accommodate new wide-ranging projects. In 1969 the Institute, now a School, was named for Dorothy H. and Lewis Rosenstiel in recognition of a major contribution made through the Rosenstiel Foundation to encourage progress in the marine and atmospheric sciences at the University of Miami. In 1977, the School and College of Arts and Sciences joined together to establish an undergraduate Marine and Atmospheric Science program based on the Coral Gables campus. The degree granting authority for this program was formally transferred to the Rosenstiel School in 2008.

Today the Rosenstiel School has a faculty of 100 scientists who conduct sponsored research while offering graduate studies leading to the Master of Professional Science, Master of Science and Doctor of Philosophy degrees. The School offers curricula in applied marine physics, marine and atmospheric chemistry, marine affairs and policy, marine biology and fisheries, marine geology and geophysics, and meteorology and physical oceanography. The School also offers undergraduate programs leading to the Bachelor of Science in Marine and Atmospheric Science degree.

Government agencies and private organizations support basic and applied research at the Rosenstiel School. Graduate students are an integral part of the research effort, and research programs, many multidisciplinary in nature, provide the environment within which professors and students interact.

The Rosenstiel School has modern laboratory facilities and a state-of-the art catamaran, unrivaled worldwide for both shallow and deep water research. The vessel, named the F. G. WALTON SMITH, in honor of the founder of the Rosenstiel School, signals a new era in scientific research. The Smith was built in 1999 and placed in service in February, 2000.

The 96-foot-long catamaran is capable of reaching speeds of over 12 knots and has a draft of only 5 feet, which enables it to explore heretofore inaccessible areas such as reefs, mangroves, grassbeds, and other shallow environments. The vessel accommodates 20 people in its ten two-person staterooms and encompasses 800 square feet of laboratory space, as well as an additional 800 square feet of multi-use space astern. Constructed by Eastern Shipbuilding Group in Panama City, Florida, the catamaran boasts twin Cummins engines at 760 hp each, Servogear variable pitch propellers, a 3,000-gallon tank of fresh water plus a reverse osmosis water maker, and 10,000 gallons of fuel storage.
DEPARTMENTS

The Rosenstiel School is made up of six academic divisions through which graduate degree programs are offered. These are:

- Applied Marine Physics
- Marine and Atmospheric Chemistry
- Marine Affairs and Policy
- Marine Biology and Fisheries
- Marine Geology and Geophysics
- Meteorology and Physical Oceanography

DEGREE PROGRAMS

The Rosenstiel School of Marine and Atmospheric Science offers graduate degree programs leading to the Master of Science, Master of Science, and Doctor of Philosophy degrees in applied marine physics, marine and atmospheric chemistry, marine biology and fisheries, marine geology and geophysics, and meteorology and physical oceanography. The division of Marine Affairs and Policy offers interdisciplinary Master of Arts and Master of Science degrees only.

In conjunction with the University of Miami School of Law, the Division of Marine Affairs and Policy at the Rosenstiel School also offers a joint degree program in Law and Marine Affairs. Upon completion of this program, a student earns a Juris Doctor degree from the School of Law and the M.P.S. in Marine Affairs and Policy from Rosenstiel.

The Rosenstiel School admits graduate students in the following categories. Regular admission is for students who wish to pursue a graduate degree. Non-degree admission provides an opportunity for graduate study to qualified applicants who do not wish to work toward an advanced degree but who have special objectives for professional study, or who already hold an advanced degree and desire additional coursework in the field. No more than twelve (12) credit hours may be taken while in non-degree status. A Certificate Program is available in all areas of study. This program provides professional training for any student who requires training in a specific research area but does not require an advanced degree. This program consists of one year full-time study with a minimum of eighteen (18) credit hours. Transient status is a type of non-degree admission available to students enrolled in a graduate program elsewhere but desiring to earn credit at the University of Miami for the purpose of transferring it to the home institution. All graduate students are required to demonstrate the ability to prepare and teach scientific material.

ADMISSION REQUIREMENTS

An application for admission to the Rosenstiel School of Marine and Atmospheric Science consists of the application form, application fee, transcripts, results of the Graduate Record Examination, results of the TOEFL or IELTS exam (for international students), and three letters of recommendation from persons knowing the applicant’s academic abilities. The application is encouraged to be filed by Dec 1st and must be filed by January 1st to have the highest probability for acceptance the following Fall semester. The application submission period for the M.P.S. program is from February 1st to June 1st. Students are
normally admitted only in the Fall semester; however, applicants who have received a Master’s degree may be considered for Spring admission to the Ph.D. program.

Because of resource limitations, only a small percentage of those applying for graduate study in marine and atmospheric science can be accepted. Undergraduate scholastic performance, the reputation of the school involved, Graduate Record Examination scores, and the letters of recommendation are all considered in evaluating an application.

A complete description of the Rosenstiel School, its faculty, educational and research facilities, curriculum and degree requirements is contained in the Bulletin of the Rosenstiel School of Marine and Atmospheric Science. The current Bulletin and additional information can be found on the Rosenstiel School website located at www.rsmas.miami.edu/grad-studies/.

UNDERGRADUATE PREPARATION

Students interested in pursuing marine or atmospheric science on the graduate level should elect an undergraduate major in one of the basic scientific disciplines. The undergraduate college should be selected on the basis of curriculum, staff strength, and research interests in that major. The student should be careful to satisfy the graduation requirements of his/her own college or university and should consult undergraduate departmental advisors for assistance on individual programs.

The undergraduate course requirements for students applying for graduate study at the Rosenstiel School are detailed below. The courses that are required or strongly recommended are printed in roman type. The courses which should be taken if the student’s program can include them are printed in italic type.
### Applied Marine Physics/Ocean Engineering

<table>
<thead>
<tr>
<th><strong>Physics</strong></th>
<th><strong>Chemistry</strong></th>
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<tbody>
<tr>
<td>General physics</td>
<td>General chemistry</td>
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<tr>
<td>Mechanics</td>
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<td>Thermodynamics</td>
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<td><em>Electromagnetism</em></td>
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<tr>
<th><strong>Mathematics</strong></th>
<th><strong>Engineering</strong></th>
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<tbody>
<tr>
<td>Calculus</td>
<td>Fluid mechanics</td>
</tr>
<tr>
<td>Differential equations</td>
<td>Solid mechanics</td>
</tr>
<tr>
<td>Advanced calculus</td>
<td>Electronics</td>
</tr>
<tr>
<td><em>Complex variables</em></td>
<td>Signal processing</td>
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<tr>
<td>Linear algebra</td>
<td></td>
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<tr>
<td>Numerical methods</td>
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<tr>
<td>Probability and statistics</td>
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</table>

### Marine and Atmospheric Chemistry

<table>
<thead>
<tr>
<th><strong>Chemistry</strong></th>
<th><strong>Mathematics</strong></th>
</tr>
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<tbody>
<tr>
<td>Inorganic chemistry</td>
<td>Linear algebra</td>
</tr>
<tr>
<td>Physical chemistry</td>
<td>Calculus</td>
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<tr>
<td>Organic chemistry</td>
<td>Differential equations</td>
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<tr>
<td><em>Qualitative analysis</em></td>
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<tr>
<td><em>Quantitative analysis</em></td>
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<tr>
<td>Biochemistry</td>
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<td><em>Geochemistry</em></td>
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<table>
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<tr>
<th><strong>Physics</strong></th>
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<tbody>
<tr>
<td>General physics</td>
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</table>

### Marine Biology and Fisheries

<table>
<thead>
<tr>
<th><strong>General Requirements</strong></th>
<th><strong>Biological Sciences</strong> (all courses recommended only)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Biology (one year)</td>
<td>Genetics/Molecular biology</td>
</tr>
<tr>
<td>General Chemistry (one year)</td>
<td>General Physiology/Cell Biology</td>
</tr>
<tr>
<td>Organic Chemistry OR Biochemistry (onesemester)</td>
<td>Ecology/Population Biology</td>
</tr>
<tr>
<td>Physics (one year)</td>
<td>Evolutionary/Biology</td>
</tr>
<tr>
<td>Calculus (one year)</td>
<td>Organismal Biology (vertebrate or invertebrate)</td>
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<tr>
<td>Language (none)</td>
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</tbody>
</table>

*Deficiencies in one of the required courses may be considered on a case-by-case basis for otherwise highly qualified students.*

### Marine Affairs and Policy

There are no specific requirements for the Division of Marine Affairs and Policy. Please contact the Department for information on academic requirements.

### Marine Geology and Geophysics

<table>
<thead>
<tr>
<th><strong>Geology</strong></th>
<th><strong>Mathematics</strong></th>
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<tbody>
<tr>
<td>Physical geology</td>
<td>Calculus</td>
</tr>
<tr>
<td>Mineralogy</td>
<td>Differential equations</td>
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<tr>
<td>Petrology</td>
<td>Linear algebra</td>
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<tr>
<td>Paleontology</td>
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<tr>
<td>Structural geology</td>
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<td>Field geology</td>
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<tr>
<td>Stratigraphy</td>
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<tr>
<td>Sedimentation</td>
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</table>
DEGREE REQUIREMENTS

THE MASTERS OF PROFESSIONAL SCIENCES (MPS) PROGRAMS

The M.P.S. Degree

The Masters of Professional Science degree is offered in the disciplines of marine affairs and policy, marine biology and fisheries, and meteorology and physical oceanography. It is expected that the normal time for completion of degree requirements for the Masters of Professional Science degree will be 12 – 15 months of full-time study.

Credit Requirements

Students in the Masters of Professional Science Program are required to complete 24 course credits and 6 internship credits. Within each track, there are compulsory classes and electives. Coursework is multi-disciplinary and thus will be accepted from multiple departments. As the terminal part of the degree, students must complete an internship with an approved agency, institution, or business, culminating in a final report.

Comprehensive Examination

A comprehensive examination is required of all M.P.S. students after completing at least 18 course credits and prior to beginning an internship. In most cases, the exam will be written and will be based on M.P.S. coursework. However, each division determines the content and form of the examination and establishes the test date for its students in a given year-class according to general school guidelines. In the event of a failure, a student may be re-examined once, upon the advice of the student's advisor and at the discretion of the faculty of the division. If granted, the re-examination must be given before the end of the following
semester. The Graduate Studies Office should receive written notification of the examination results. Students who fail the re-examination are subject to dismissal from the school.

**Internship**
Each student will be required to complete an internship with an organization engaged in some activity associated with marine and atmospheric science and identify an Internship Supervisor. Internships can be either paid or unpaid by the organization, or students can complete the internship by formal participation in a University sponsored program. An internship proposal, including contact information for the Internship Supervisor, must be submitted to the academic advisor and mentor for approval before the internship can begin.

**Internship Report**
The final grade will be based on a written report and an oral presentation. The internship report is not a summary of involvement but rather a contributory assessment of the experience, including developmental insight and a summary of any research performed. Internship report guidelines will be provided.

**Conference Attendance**
Though not mandatory, M.P.S. students are strongly encouraged to attend a scientific conference during their academic residency at RSMAS.

**THE M.S. PROGRAM**
The Master of Science degree is offered in the disciplines of applied marine physics, marine affairs and policy, marine biology and fisheries, marine and atmospheric chemistry, marine geology and geophysics, or meteorology and physical oceanography. It is expected that the normal time for completion of degree requirements for the Masters of Science degree will be two years of full-time study.

**Credit Requirements**
Twenty-four graduate course credits are required for the Master of Science degree. In addition, the student must enroll for a total of six credit hours of thesis research (710). All students are required to take at least one course outside the division of residence.

**Comprehensive Examination**
A comprehensive examination is required of all students. Each division determines the content and form of the examination and establishes a test date for its students according to general School guidelines. In the event of a failure, a student may be reexamined once, upon the advice of the student’s committee and at the discretion of the faculty of the Division. If granted, the reexamination must be given before the end of the following semester. Students who fail the re-examination are subject to dismissal from the School.

**Thesis**
A thesis is normally required for the Master of Science degree in marine and atmospheric science. Under certain conditions, the requirement of a thesis may be waived. A paper accepted for publication can be substituted for the thesis (only where the student is the sole author), or the M.S. degree can be bypassed. Both of these exceptions must be approved by the student’s committee, the faculty of the pertinent division, and the School Graduate Academic Committee. If a thesis is required, a public oral defense of the thesis must take place. The thesis committee must consist of at least three members, one of whom is a regular member of the Graduate Faculty of the University; one member must be from outside the division.
THE M.S. PROGRAM IN MARINE AFFAIRS

The Rosenstiel School of Marine and Atmospheric Science offers a Master of Science Program in Marine Affairs and Policy. There are two tracks that are currently offered in the program. The Master of Science Policy track offers an advanced training program in marine science applicable to topics such as the integrated coastal zone management and spatial planning. Applicants must have a baccalaureate degree from an accredited college or University. This program is for students with interests in the areas of administration, management and the conservation of marine resources.

The Master of Science degree in Marine Affairs and Policy is an integrated track in marine science and policy and gives students with a strong science background opportunities to build careers in marine resource management. The M.S. offers an academic curriculum for students interested in the application of science and technology to management issues.

Both M.S. tracks may be completed in two and one half years in an intensive program of five semesters.

Credit Requirements
The Master of Science requires the completion of 24 course credits and six master’s thesis credits. A committee of three is required – one advisor from Marine Affairs and Policy, a member from outside of Marine Affairs and Policy and one other faculty member from Marine Affairs and Policy. A thesis is required for the M.S. degree and a public oral defense of the thesis must take place. A grade point average of 3.0 or better must be maintained. All students are required to take at least one course outside the division.

Comprehensive Examination
An oral and written comprehensive examination is required of all students in Marine Affairs and Policy. In the event of a failure, a student may be reexamined once, upon the advice of the students committee and at the discretion of the faculty of the Division. If granted, the reexamination must be given before the end of the following semester. Students who fail the re-examination are subject to dismissal from the School.

THE PH.D. PROGRAM

The Doctor of Philosophy degree is offered in applied marine physics, marine biology and fisheries, marine and atmospheric chemistry, marine geology and geophysics, and meteorology and physical oceanography. It is expected that the total time to complete the requirements for the Ph.D. degree will normally be four years of full-time study from the date of receipt of the M.S. degree or, if the M.S. is bypassed, five years of full-time study from the date of admission with a bachelor's degree.

Credit Requirements
A total of sixty credits are required for the Ph.D. and not less than half of the total credits must be in work open only to graduate students (i.e. 600 level or above). At least twenty-four of the sixty credits must be course credits taken in residence at the University of Miami, and may include those course credits taken as part of the Master of Science degree. A minimum of 12 dissertation research credits must be taken; however, the course credit and research credit requirements needed are determined by the individual division. Students transferring into the school with a Master’s of Science degree are normally given credit for twenty-four course credits. However, individual divisions may require additional course
credits to remove deficiencies. All students entering the Ph.D. program without a master’s
degree are required to take at least one course outside the division of residence.

**Dissertation Committee**
The dissertation committee must consist of at least four members; this includes the
committee chair, who shall be a member of the division or share the chair duties with a co-
chair from the committee and be a regular member of the Graduate Faculty. Of the
remaining members, two shall be from the Graduate Faculty, and one member of each
Ph.D. committee must have their primary affiliation outside of RSMAS and that member
must also have a Ph.D. degree. (Adjunct and secondary appointments are considered
outside if their primary affiliation is not RSMAS).

**Comprehensive Examination**
An oral comprehensive examination is required of all RSMAS students. Some divisions may
also require a written component in addition to the oral exam. In the event of a failure, a
student may be re-examined once, upon the advice of the student’s committee and at the
discretion of the faculty of the division. Students who fail the re-examination are subject to
dismissal from the School.

**Qualifying Examination**
A written qualifying examination is required of all students admitted to the doctoral
program. The student’s committee will normally prepare and administer the examination
within the guidelines established by the faculty of the School and of each division. In the
event of a failure, a student may be reexamined once, upon the recommendation of the
student’s committee and at the discretion of the faculty of the division. If granted, the
reexamination must be given before the end of the following semester. Language and other
research tools requirements, if applicable, must be completed prior to taking the qualifying
examination. Students who fail the re-examination are subject to dismissal from the School.

**Dissertation Proposal**
An outline of the dissertation containing the following must be approved by the student's
committee and submitted to the RSMAS Graduate Studies Office with a copy to the division
academic committee:

(a) tentative title
(b) statement of the problem and objectives
(c) methods of attacking the problem, including equipment and facilities required
(d) timetable
A “Proposal Approval” form must accompany the proposal and be signed by the members of
the student’s committee.

**Admission to Candidacy**
Upon completion of the following requirements, the student is admitted to candidacy:

(a) have an approved committee on file in Graduate Studies
(b) successfully pass the comprehensive examination
(c) successfully pass the qualifying examination
(d) complete the language requirement, if any
(e) submit the dissertation proposal
(f) have a 3.0 average in all credits earned (≥ 12 credits)
(g) remove all “I” or deficiencies
An application for Admission to Candidacy must be completed. All doctoral students must be admitted to candidacy at least one semester prior to the one they intend to graduate.

**Dissertation**
A dissertation is required of all doctoral students at the Rosenstiel School. A public oral defense of the dissertation is required. A student must be admitted to candidacy prior to the defense and registered in the semester that he/she defends. Each dissertation must be accompanied by three originals of the Certificate of Approval. This form must be signed by all members of the student’s committee and the RSMAS Associate Dean of Graduate Studies.

No student gains the right to be recommended for the degree simply by fulfilling requirements. This right is reserved for the student’s Committee. Any student who fails to meet the cumulative grade point average requirement and other academic progress standards established by the University and the School is subject to dismissal from the graduate program.
Master of Science and Doctor of Philosophy degrees in applied marine physics are offered by the Applied Marine Physics Division of the Rosenstiel School of Marine and Atmospheric Science. An approved interdisciplinary program is required for the M.S. degree in applied marine physics which consists of a minimum of 30 semester credits at the graduate level with an average grade of “B” or better and no grade below “C.” The 30 credits are divided among 24 credits in courses and six credits for thesis research. At least six of the required course credits must be at the 600 level. For the Ph.D. degree, 60 graduate semester credits are required. These are divided among a minimum of 36 credits in courses (18 of which must be at the 600 level) and a minimum of 12 credits in dissertation research.

Applied Marine Physics Course Listing
MARINE AFFAIRS AND POLICY - Dept. Code: MAF

DEGREE PROGRAMS

The Division of Marine Affairs accepts highly qualified students who wish to pursue an academic degree program that combines a basic curriculum in marine science with a complementary program in a non-marine science discipline. The program is intended to provide the student with a broadened perspective of marine issues and problem-solving abilities. MAF offers a specialization in aquaculture management. This track focuses on technological, environmental, and economic feasibility of sustainable aquaculture operations.

Current division research and teaching focus on integrated coastal zone management, marine resource economics, political and environmental ecology, coastal and ocean law and policy, fisheries and aquaculture management, environmental planning and environmental impact assessment, underwater marine cultural resource management and marine geographic information systems.

Marine Affairs and Policy offers a Master of Science (MS) and Master of Professional Science (MPS) degrees. The M.S. in Marine Affairs and Policy program is geared to students who are interested in the application of science and technology in issues of marine resource management and are willing to carry out independent investigation and to present the results in a thesis. The MS has two tracks, the Science/Policy track and the Policy track. Students who apply to the Science/Policy track are required to have a B.S. degree in one of the pure sciences. The MS curriculum will include courses and training, which will address current marine policy issues and policy analysis techniques. The MPS program is geared to students with diverse academic backgrounds who are interested in careers related to marine resource management and policy and who seek advanced training in marine and atmospheric science.

Marine Affairs and Policy, in cooperation with the Undergraduate Marine and Atmospheric Science Program, also offers a five-year BA/MPS Program in Marine Affairs. This program enables qualified students to earn a B.A. in Marine Affairs in four years with the opportunity to earn an M.P.S. with only one additional year. Conditional acceptance to the MPS program is based on the student’s GPA at the end of their sophomore year. Students must then take GRE exams and apply for acceptance to the graduate program at Rosenstiel during their junior year.

The Division of Marine Affairs and Policy at the Rosenstiel School and the University of Miami School of Law offer a Joint degree program in Law and Marine Affairs. Upon completion of this program, a student earns a Juris Doctor degree from the School of Law and the MPS in Marine Affairs from Rosenstiel. A student may complete requirements for both degrees within three and one-half years in an intensive program of six semesters and two full summers. This program is geared toward students who want a career in the field of law with a specialization in marine and environmental issues.
MARINE AND ATMOSPHERIC CHEMISTRY - Dept. Code: MAC

DEGREE PROGRAMS

The program covers the chemistry of the atmosphere and oceans, including geochemical, photochemical and biochemical processes. Undergraduate training should be in chemistry, physics, biology and mathematics; also useful may be courses in geology, biochemistry, oceanography and meteorology.

New students are evaluated for their knowledge of chemistry; deficiencies are corrected by directed study and/or course work and must be remedied within one year. New students can be admitted to the M.A. or the M.S. program, or directly into the PhD program, even without a prior M.S. degree.

Students are assigned a faculty advisor when they are accepted into MAC, and during their first year they form a supervisory committee. The advisor and committee plan a course of study and research for the student. Students without an MS degree take a written comprehensive examination towards the end of the first year. The comprehensive exam tests the basic knowledge of marine and atmospheric science, and is based on core course material. The research proposal usually includes an abstract, background material, hypothesis and/or list of objectives, methods, preliminary data, and bibliography. Ph.D. students also take a written qualifying exam. The qualifying examination is set by the advisor and supervisory committee and is taken after their approval of the dissertation proposal. An oral examination may be required after the written examination. Students who twice fail the qualifying examination will receive an MS if they present and successfully defend a written thesis. For all students, the seminar (MAC 670) is taken twice for credit. However, each student must give one seminar per year and they must attend seminars regularly.

The MA is a non-research degree that occupies 1 year: two semesters of 12 course credits each, and a summer session of experimental work and a written project (6 credits).

Marine and Atmospheric Chemistry Course Listing
MARINE BIOLOGY AND FISHERIES - Dept. Code: MBF

DEGREE PROGRAMS

Students admitted to the program in the Division of Marine Biology and Fisheries are required to have a strong undergraduate preparation in the life sciences, with additional coursework in mathematics (calculus), physics, and chemistry (through organic). The program offers a series of study-options leading to the M.P.S., M.S. or Ph.D. degrees. These are intended to guide the student in a comprehensive study of marine organisms and the marine environment, and to develop areas of specialization within the marine biological sciences. Students are strongly encouraged to contact the faculty member whose area of research is of interest to them.

Areas of faculty interest include biological oceanography, biochemistry and molecular biology, ecology, fisheries, microbiology, physiology, toxicology, systematics, behavior and ecosystem and fisheries management. Students are not restricted to studies in any one study-option, and may (in consultation with their faculty advisor and/or committee) tailor their academic programs to suit individual interests in more than one area of faculty expertise. Within the Division of Marine Biology and Fisheries there are four major academic tracks for the M.S and Ph.D. degrees, each of which has one or more sub-specializations. These are (1) Biological Oceanography, which has an emphasis on near shore and pelagic marine life; (2) Fisheries Sciences, which focuses on fisheries stock assessment, population modeling, and fisheries management; (3) Marine Biomedical Sciences, which has subspecialties in Marine Molecular Biology and Genetics, Marine Diseases, and Marine Physiology and Biochemistry/Toxicology; and (4) Ecological Sciences and Coastal Marine Biology. This latter academic track offers specialization in Marine Biology, Coral Reef and Coastal-Marine Ecology, and Ecological Systems and Environmental Management. Individual curricula may blend coursework from one or more tracks depending on the specific interests of the student.

Marine Biology and Fisheries Course Listing
MARINE GEOLOGY AND GEOPHYSICS - Dept. Code: MGG

DEGREE PROGRAMS

The undergraduate student wishing to prepare for graduate work in marine geology and geophysics must be well trained in the basic sciences. According to the special interests of the individual, the undergraduate major and minor should be in geology, physics, chemistry, and/or mathematics.

The Division of Marine Geology and Geophysics offers M.S. and Ph.D. programs in the following broad areas:

- Environmental Geology and Geochemistry
- Sedimentary Systems and Marine Geology
- Paleoclimatology and Global Change
- Igneous Petrology and Geochemistry
- Geophysics
- Geodesy

Within each discipline, students have considerable flexibility in choice of courses, and “cross-track” courses are possible for students with special interests. Interactions with other divisions are particularly encouraged.

[Marine Geology and Geophysics Course Listing](#)
METEOROLOGY AND PHYSICAL OCEANOGRAPHY - Dept. Code: MPO

DEGREE PROGRAMS

The Division of Meteorology and Physical Oceanography (MPO) of the Rosenstiel School of Marine and Atmospheric Science (RSMAS) is engaged in research and graduate instruction in the physical processes governing the motion and composition of the ocean and atmosphere. The program ranges from direct observation to theoretical and numerical modeling of the earth-atmosphere system.

Three types of degrees are awarded by the Division: Master of Science, which requires 30 credits, including 24 credits in courses and 6 research credits; Doctor of Philosophy, which requires 60 credits, including a minimum of 36 course credits and a minimum of 12 research credits; the Division also awards Master of Professional Science degrees.

Students applying for admission to graduate study in the Division of Meteorology and Physical Oceanography should have a solid background in mathematics and physics or engineering. Once admitted, students in this Division will take courses in both Meteorology and Physical Oceanography in order to develop an understanding of the ocean and the atmosphere as closely related dynamical systems.

In the first year, students will take 5-6 courses, followed by a comprehensive exam at the end of the spring semester. Based on the results of this exam, students may be given the option to enter the Ph.D. program directly, to enter the M.S. program (leading to subsequent entrance into the Ph.D. program), or they may be required to re-take the comprehensive exam. Typical times for completion are 2-3 years for M.S. degrees and 4-6 years for Ph.D. degrees.

Meteorology and Physical Oceanography Course Listing
LIFE SCIENCES-SCHOOL OF MEDICINE

PROGRAM IN BIOMEDICAL SCIENCES
DEPT CODE: PIBS

www.biomed.miami.edu

ADMISSION REQUIREMENTS

The Program in Biomedical Sciences (PIBS) provides an entry point for first year doctoral students interested in obtaining a Ph.D. from the Leonard M. Miller School of Medicine. PIBS students experience a common first-year curriculum to build a solid foundation in biomedical science.

In the fall, students enroll in PIBS 601, which is a 9 credit course covering fundamentals of molecular and cellular biology, important model organ systems, and technical approaches in modern biomedical science. The course meets 4 days/week, 2 hours/day. The first hour is a lecture/discussion, and the second hour varies from professional development activities (reading papers, writing papers, choosing a lab and a project, time management, etc.) to discussions of particular relevant techniques, to critical reading of relevant literature.

In the spring semester, students elect from a menu of individual modular courses offered by the 8 graduate programs. Each modular course covers 6-7 weeks, and students will elect 1-2 of these per half semester. These courses will cover topics of more specific relevance to graduate programs or research themes.

Students will perform at least 3 laboratory rotations of 9 weeks each during the first year, and will generally choose a dissertation laboratory (and graduate program) during the latter half of the spring semester. If necessary a fourth rotation is possible, and in this case laboratory choice may be deferred until June.

In addition, students will meet several times per semester in small groups (6-7/group) with a mentor. Mentors are chosen for their experience and commitment to student training. In these group sessions, students will discuss a variety of issues relevant to challenges and opportunities in biomedical research, preparing for success in graduate school, and building a successful research career.

Ph.D. Program Choices:

Biochemistry & Molecular Biology
Cancer Biology
Human Genetics & Genomics
Microbiology & Immunology
Molecular Cell & Developmental Biology
Molecular & Cellular Pharmacology
Neuroscience
Physiology & Biophysics
ADMISSION REQUIREMENTS

Applicants should have a bachelor’s degree in a biological or related discipline (e.g., psychology, chemistry, engineering, physics). Although there are no absolute prerequisites, courses in general biology, cell/molecular biology, calculus, general physics, organic chemistry, physical chemistry, and biochemistry are encouraged.

Strong candidates will have research experience in a laboratory setting (including publications of abstracts and/or papers), an excellent academic record and GRE scores, excellent letters of recommendation from scientists who know the candidate well, and the motivation to pursue state-of-the-art biomedical research. The PIBS Admissions Committee will review and make decisions on applications after December 15th.

- Students should apply online at: www.biomed.miami.edu

Inquiries should be directed to:

Program in Biomedical Sciences
University of Miami
Miller School of Medicine
Office of Graduate Studies
POB 016189
Miami, Florida 33101-6189
Office: 305.243.5867
Email: biomedgrad@miami.edu
Website: www.biomed.miami.edu

PIBS Course Listing

M.D./Ph.D. PROGRAM

ADMISSION REQUIREMENTS

Admission to the MD/PhD Program is highly competitive, and interested applicants are advised to apply early in the fall. AMCAS applications must be received by the Medical Admissions Office no later than December 15. Competitive applicants usually have a cumulative undergraduate science G.P.A. of at least 3.4 and a composite score of at least 32 on the MCAT exam. Preference will be given to candidates who can provide tangible evidence of a commitment to biomedical research, substantial laboratory or other relevant research experience and scientific talent. Applications from under-represented groups, including minorities and women, are encouraged.

The completed application should contain a research narrative and two letters of recommendation from scientists who specifically address their potential as a physician scientist. One of these must come from a scientist with whom the student performed research. Composite evaluations from a premedical advisory committee
cannot be substituted for either of these letters. The Graduate Record Examination (GRE) is not required for matriculation into the MD/PhD Program.

All MD/PhD applicants are reviewed by both the MD Program Admissions Committee and the MD/Ph.D Program Admissions Committee. These evaluations proceed independently and a student will still be considered for the MD program, even after an unfavorable review by the MD/Phd Program. A successful applicant is granted admission to both the MD Program and the MD/PhD Program.

**DEGREE PROGRAMS**

The Basic Science Graduate Programs

The following doctoral programs, described elsewhere in this bulletin, participate in the MD/PhD Program. The MD/PhD Program office can provide you with further information about these programs and the research interests of their faculty.

- Biochemistry and Molecular Biology
- Sheila and David Fuente Cancer Biology Program
- Epidemiology and Public Health
- Human Genetics & Genomics
- Microbiology and Immunology
- Molecular Cell and Developmental Biology
- Molecular and Cellular Pharmacology
- Neuroscience
- Physiology and Biophysics

**Program Sequence**

Students complete the first two years of medical school, which is followed by their PhD training and then the final two years of clinical clerkships. Students are advised to begin the program in June to enable an early start on their research rotations as the MD program courses begin in mid-August. Some students choose to continue their research during the first two years of medical school. It is recommended that students select and apply to a graduate program by February of their second year in the program and identify a research mentor no later than the beginning of the third year. The summers before the second and third year are usually spent in research rotations. The third year is spent both in class to fulfill the final graduate course requirements and in the mentor's laboratory. Students should plan to take their Ph.D. qualifying exam by the end of the third year. The following two or more years are spent carrying out original research for their dissertation. All Ph.D. requirements must be completed before entry into the third year of medical school.

Combined degree programs are long and challenging. To relieve pressure produced by the demands of the medical and graduate curricula, the University of Miami Miller School of Medicine provides a stimulating and supportive environment in which all combined degree students have frequent opportunities to exchange their ideas, energy and concerns.

The on-going program activities provide opportunities for integration of clinical problems with basic science advances. Enhance the clinical curriculum with in-depth case reviews.
Foster discussion of the students’ own research results in an interdisciplinary, rigorous, but informal setting.

Also, special events are scheduled to bring the program’s students together for in-depth discussion with international leaders in research.
BIOCHEMISTRY AND MOLECULAR BIOLOGY  
Dept. Code:  BMB

The aim of graduate education in this department is to prepare students for careers in Biochemistry and Molecular Biology. This training provides the student with a broad knowledge in the various aspects of Modern Biochemistry and Molecular Biology. Independent laboratory research is emphasized at all stages of the student’s career.

Some of the Biochemistry faculty are affiliated with: other departments in the University, the VA hospital, the Sylvester Comprehensive Cancer Research Center, and the Brahman Breast Cancer Institute. Thus, research facilities for a large variety of specialties are available to our students. Some of the graduate students participate in the combined M.D.-Ph.D. Program.

ADMISSION REQUIREMENTS

All students are admitted through the Program in Biomedical Sciences (PIBS) for the PhD programs in: Biochemistry & Molecular Biology, Cancer Biology, Human Genetics & Genomics, Microbiology & Immunology, Molecular Cell & Developmental Biology, Molecular & Cellular Pharmacology, Neuroscience, and Physiology & Biophysics. The PIBS Admissions Committee will review and make decisions on applications after December 15th.

Applicants should have a bachelor’s degree in a biological or related discipline (e.g., psychology, chemistry, engineering, physics). Although there are no absolute prerequisites, courses in general biology, cell/molecular biology, calculus, general physics, organic chemistry, physical chemistry, and biochemistry are encouraged.

Strong candidates will have research experience in a laboratory setting (including publications of abstracts and/or papers), an excellent academic record and GRE scores, excellent letters of recommendation from scientists who know the candidate well, and the motivation to pursue state-of-the-art biomedical research.

In the first year all students take a common curriculum to build a solid foundation in biomedical science. The core coursework in the fall ranges from molecules to cells to systems of human physiology. Lectures are balanced by breakout sessions, in which faculty members discuss the primary literature with students in small groups. The core curriculum also offers critical learning opportunities in biostatistics and in using genomic and other databases, as well as education in ethics. Students also meet several times in small groups with experienced faculty mentors to discuss important issues of faculty development. Specific coursework relating to the individual graduate programs is done largely in the second and third semesters of study.

The first year is also focused on choosing a program and a dissertation mentor. All students are initially mentored by a senior student and a faculty member to facilitate this process. In the first year, students rotate through at least 3 laboratories chosen from any of the biomedical sciences graduate faculty. At the end of the first year,
students choose mentors and formally enter individual graduate programs.

- Students should apply online at: www.biomed.miami.edu

**DEGREE PROGRAMS**

All incoming students will be advised by the Operating Committee. This committee will assist and mentor students prior to their selection of a thesis advisor. In addition students will be provided guidance concerning choices of courses and research programs. The student should choose a thesis mentor from the program faculty by the beginning of the second year of graduate study. The program operating Committee, in consultation with the mentor, will appoint a thesis committee and set up a tentative schedule for the remainder of the student’s graduate studies.

**DEGREE REQUIREMENTS**

Completion of the Ph.D. degree requires the completion of 36 credits of coursework at the graduate level (including specific required courses), 24 credits of thesis research, passing a qualifying exam, and submitting and successfully defending a dissertation showing results obtained on a research problem. The degree earned will be Doctor of Philosophy in Biochemistry and Molecular Biology.

Inquiries should be directed to:

Dr. Zafar Nawaz  
Graduate Program in Biochemistry and Molecular Biology  
University of Miami, Miller School of Medicine  
Department of Biochemistry and Molecular Biology  
P. O. Box 016129  
Miami, FL 33101  
Tel. 305/243-6261

**COMBINED M.D.-PH.D. DEGREE.**

The Department participates in the School of Medicine’s M.D.-Ph.D. Program in which students may obtain both degrees.

The curriculum will be tailored to the needs of the individual student.

[Biochemistry and Molecular Biology Course Listing](#)
THE PROGRAM

The Sheila and David Fuente Graduate Program in Cancer Biology is a University-wide interdisciplinary training program that involves faculty from the basic science and clinical departments of the University of Miami. The objective of this program is to provide a unique multidisciplinary training environment for highly qualified individuals that will prepare them for independent research and teaching careers. The overall philosophy of the program is to integrate basic and clinical research. The scientific focus is on the biology of cancer and the development of novel diagnostic and therapeutic approaches.

The program emphasizes a multidisciplinary approach which incorporates concepts and state-of-the-art techniques from molecular biology, biochemistry, cell biology, biostatistics, genetics, genomics, immunology, proteomics, structural biology, clinical oncology, and translational research programs at the Sylvester Comprehensive Cancer Center. An important goal of the program is to provide students with a strong background in basic biomedical research coupled with an understanding of clinical aspects of cancer including diagnostic, prognostic, and therapeutic intervention. To achieve this goal the program utilizes a unique program of study that includes lectures from both basic and clinical researchers. In addition, the program has a two-tier mentoring system in which students receive guidance from both a research mentor and a physician mentor. The research mentor is the dissertation advisor, while the physician mentor will provide the student with a clinical perspective in oncology. Through this dual mentorship students conduct their doctoral research and obtain clinical knowledge in their area of study. The program aims to instill in students the ability to design multidisciplinary research programs in which scientific research is driven by unmet clinical challenges.

The curriculum includes core courses in Tumor Biology, Student Seminars, Tumor Boards, Special Topics in Cancer Research, Dialogues with Cancer Clinicians, and Logic and Reasoning in Translational Cancer Research. Students can also choose electives in cancer epidemiology, cellular and molecular biology, immunology, pharmacology, and microbiology with permission of CAB Director. After joining the program and choosing a research mentor, students formulate a proposal and take a qualifying exam. Their subsequent research is guided by an individually tailored dissertation committee, including the research advisor and physician mentor.

ADMISSION REQUIREMENTS

All students are admitted through the Program in Biomedical Sciences (PIBS) for the PhD programs in Biochemistry & Molecular Biology, Cancer Biology, Human Genetics & Genomics, Microbiology & Immunology, Molecular Cell & Developmental Biology, Molecular & Cellular Pharmacology, Neuroscience, and Physiology & Biophysics. The PIBS Admissions Committee will review and make decisions on applications after December 15th.
Applicants should have a bachelor’s degree in a biological or related discipline (e.g., psychology, chemistry, engineering, physics). Although there are no absolute prerequisites, courses in general biology, cell/molecular biology, calculus, general physics, organic chemistry, physical chemistry, and biochemistry are encouraged.

Strong candidates will have research experience in a laboratory setting (including publications of abstracts and/or papers), an excellent academic record and GRE scores, excellent letters of recommendation from scientists who know the candidate well, and the motivation to pursue state-of-the-art biomedical research.

In the first year all students take a common curriculum to build a solid foundation in biomedical science. The core coursework in the fall ranges from molecules to cells to systems of human physiology. Lectures are balanced by breakout sessions, in which faculty members discuss the primary literature with students in small groups. The core curriculum also offers critical learning opportunities in biostatistics and in using genomic and other databases, as well as education in ethics. Students also meet several times in small groups with experienced faculty mentors to discuss important issues of faculty development. Specific coursework relating to the individual graduate programs is done largely in the second and third semesters of study.

- Students should apply online at: www.biomed.miami.edu

**CONTACT INFORMATION**

Sheila and David Fuente Graduate Program in Cancer Biology
Sylvester Comprehensive Cancer Center
Miller School of Medicine
P.O Box 019132 (M-877)
Miami, Florida 33101
Phone: 305-243-2287
Fax: 305-243-1855
Director: Kerry L. Burnstein, Ph.D.

[ Cancer Biology Course Listing ]
CLINICAL and TRANSLATIONAL INVESTIGATION DEPT CODE: CTI

This Master’s of Science in Clinical and Translational Investigation (MSCTI) at the University of Miami has been established to create a structured educational program that offers trainees of diverse cultural and educational backgrounds formal graduate training in the principles and practice of translational science and clinical research. Our highly integrated, cross-disciplinary program has been designed to further the new discipline of translational science by providing a foundation for the development of future practitioners and leaders of translational science who are prepared to deal with the perceived bottlenecks that inhibit translational research: institutional culture and practice, scientific complexity of translational research design and methodology, and regulatory and ethical processes. The overall goal of this curriculum development award is to engage promising new and Early Stage Investigators in the discipline of translational science, so that they make the pursuit of academic translational science their own professional goal.

The Masters in Clinical and Translational Investigation program is a one to three – year (time dependent on goals and responsibilities of accepted students), 30 credit program that includes completion of structured content courses, participation in small group interactive seminars, and completion of a K-award, R21, or R01-type interdisciplinary clinical/translational research proposal that will serve as a thesis or a formal master thesis, to be evaluated by a thesis committee consisting of one member of the Steering Committee, two faculty members, each representing one component of the translational focus (T1, T2, T3) of the student, and another investigator not affiliated with the K30 program.

Successful completion of the MSCTI will required a GPA of 3.0 or greater with no grades below C in any courses (these can be retaken and improved grades substituted) and successful completion of the thesis project

ADMISSIONS REQUIREMENTS

All strong research backgrounds are eligible to submit an application. Applications will be reviewed in batches, and admittance will be based on those most qualified for the program. We strongly encourage the following to apply:

- Individuals who have completed terminal healthcare degrees (e.g., MD, PhD, DO, RN) who are interested in pursuing additional formal didactic training to become independent investigators in clinical and/or translational science;

- Individuals who have completed terminal scientific degrees (e.g., Ph.D., DSci) who are interested in pursuing additional formal didactic training to improve knowledge and skills related to translation of basic to clinical applications; and

- Individuals who are currently enrolled in a terminal degree program (e.g., MD, PhD) who are interested in adding a year to their program to obtain a MCTSI concurrent with their terminal degree.
Completed application package consist of the following:

- Completed online application form
- Application fee (US dollars, non-refundable)
- Official transcripts from each college or university attended
- Resume or Curriculum Vitae
- Three letters of recommendation
- Personal statement of career goals and interest in degree program.
- Members of the Admissions Committees examine each application for acceptance into the program. Materials submitted in support of an application are confidential and cannot be released for other purposes nor returned to the applicant.

A GRE is not required

CONTACT INFORMATION

For any questions regarding the Master’s in Clinical and Translational Investigation (MSCTI), Translational Research Bootcamp, or the Clinical and Translational Science Seminar Series, contact:

Katie Lewitt  
Program Manager  
MS Clinical and Translational Investigation  
klewitt@med.miami.edu  
Office: 305-243-6398  
Website: http://mscti.med.miami.edu/
DEGREE PROGRAMS

- Master of Public Health (MPH)
- Master of Science in Public Health (MSPH)
- Doctor of Philosophy in Epidemiology (PhD)

The Graduate Programs in the Department of Epidemiology and Public Health at the University of Miami Miller School of Medicine are at the forefront of public health science with emphases on research, education, and evidence-based, public health service. The Graduate Programs promotes an environment of learning and inquiry, stressing the scientific method as a way of generating knowledge about common pathways in health and illness. The mission of the Graduate Programs in Epidemiology and Public Health is to develop leaders who can expand and translate knowledge into policy and practice to promote health and prevent disease in human populations.

MASTER OF PUBLIC HEALTH (MPH)

The Master of Public Health (MPH) degree is a professional degree for students who require a broad general academic experience in public health. Students will acquire competency in the fundamental public health disciplines. This includes research design and conduct, data analysis and policy analysis, communications, program planning and administration, public health systems and the organization of health services in the United States and Latin America, recognition and analysis of ethical issues in public health and professional practice, the needs of special populations, and the integration of these core disciplines in public health decision making. The MPH degree is a 45 semester-hour program that is accredited by the Council on Education for Public Health. The 45 credit degree program consists of 27 credits of core coursework, 12 credits of electives and 6 credits for the capstone/culminating experience.

MASTER OF SCIENCE IN PUBLIC HEALTH (MSPH)

The MSPH is an academic research degree designed for students who wish to prepare for further study at the doctoral level, or to prepare for research or technical positions in government, industry, academia, or private institutions. Studies will include many of the core disciplines included in the MPH degree with an additional emphasis on advanced research methods and quantitative analysis skills. The 45 credit degree consists of 24 credits of core coursework, 15 credits of electives and 6 credits for the capstone/culminating experience. The MSPH program is accredited by the Council on Education for Public Health.

Full-time students can expect to complete the MPH or MSPH degree requirements within 2 years. A nine-credit waiver may be available for students who enter the MPH or MSPH degree programs with an earned advanced degree (e.g., MD, DDS, DVM).
DOCTOR OF PHILOSOPHY IN EPIDEMIOLOGY (PhD)

The Doctor of Philosophy (PhD) in Epidemiology is an intensive research training program for students with prior training in Epidemiology or related disciplines. It provides advanced education and training for students seeking a professional career in medical and health-related research, as well as for physicians and other persons who have attained professional degrees and are seeking to integrate epidemiological research and methods into their ongoing careers. The program is primarily designed for persons who have an MPH degree, as well as for physicians and others who have a master’s or doctoral degree in a related discipline.

All Ph.D. students are required to complete sixty-six (66) credit hours. There are 9 core courses in epidemiology and biostatistics (30 credit hours), 8 courses (24 credit hours) in electives and the dissertation (12 credit hours).

JOINT DEGREE PROGRAMS

Joint degree programs are also offered in conjunction with the School of Medicine (MD/MPH, MD/PhD), School of Law (JD/MPH), School of Business (MPA/MPH), and the College of Arts and Sciences (MAIA/MPH).

http://publichealth.med.miami.edu/academic-programs/dual-degree-programs

ADMISSION REQUIREMENTS

http://publichealth.med.miami.edu/future-students/admissions

- **Online Application** and non-refundable application fee of 65 USD.

- Official transcripts from all previously attended colleges and universities. All foreign transcripts must be official and submitted in the original language. If the original language is not English, an official translation must be submitted along with the transcript. We do not accept evaluations from foreign credentialing service organizations.

- **Official GRE test scores** (code 5815). Alternatively we accept the MCAT, LSAT, GMAT and DAT for the MPH/MSPH degree programs only. Applicants to the MPH/MSPH program that hold advanced degrees (MD, PhD, JD) are encouraged but not required to submit test scores.

- **Resume/Curriculum Vitae** including employment, activities, community service, education, academic or professional honors.

- **Statement of purpose** detailing your academic interest in our program as well as your future career goals. This statement should discuss any experience you have in public health including field experience, training, education or other related qualifications. Discuss how earning this degree will contribute to your future and the future of public health.

- **Three letters of recommendation** from people who are best able to assess your ability to be successful in a public health degree program. Ideally, your recommenders are recent professors, researchers or employers in a related field. You will be asked for your recommenders’ contact information on the online application. They will be sent an online form to complete via email.
To obtain detailed program curricula on the MPH/MSPH, PhD in Epidemiology and joint degree programs, please contact our offices at the address below or visit our website at http://publichealth.med.miami.edu/

For further information, please contact:

Graduate Programs Office
Department of Epidemiology and Public Health
University of Miami Miller School of Medicine (R-669)
P. O. Box 016069
Miami, Florida 33101
Tel: (305) 243-0291
E-mail: GradProgramsEPH@med.miami.edu
Website: http://publichealth.med.miami.edu/

Epidemiology and Public Health Course Listing

EPIDEMIOLOGY AND PUBLIC HEALTH

BIOSTATISTICS
Dept. Code: BST

http://www.biostat.med.miami.edu/

DEGREE PROGRAMS

- Master of Science in Biostatistics (MS)
- Doctor of Philosophy in Biostatistics (PhD)

MASTER OF SCIENCE IN BIOSTATISTICS (MS)

Prerequisites and requirements for these degrees are described below.

The essential background an ideal entering student would have is (1) a minimum of three semesters of calculus including partial derivatives and techniques for solving multiple integrals, (2) One semester of linear algebra, (3) one semester of probability theory, (4) four undergraduate courses in statistics or biostatistics. These four courses are to include a general introduction, linear regression, introductory mathematical statistics and at least one further course, typically drawn from multivariate analysis, nonparametrics, survey sampling and time series. Students who do not satisfy these pre-requisites may be required to make up their deficiencies during their first year of study.

Admitted MS students are expected to take a full suite of courses totaling 45 credits including four iterations of the seminar course, a consulting practicum as well as basic theory courses. In addition, students are expected to write a Major Paper and
pass a written examination between their first two years of study. The standard course sequence can be found at: http://www.biostat.med.miami.edu/academics/ms-in-biostatistics/ms-courses

Variations on this basic plan are permitted and decided on a case-by-case basis. Candidates may earn the MS on as part time or full time students.

DOCTOR OF PHILOSOPLY IN BIOSTATISTICS (PhD)

Formally, the essential background an ideal entering student would have is the same as for the MS program apart from item (4) where a minimum of six undergraduate courses would be expected. In practice, the ideal student will have further evidence of a commitment to the field of biostatistics usually through more extensive course work, undergraduate theses, or already having earned an MS in biostatistics or statistics. Degrees in allied fields such as mathematics, computer science, and engineering are also evidence of commitment to biostatistics if the degree clearly emphasized biostatistics related content.

Admitted PhD students are expected to take a full suite of courses including several iterations of the seminar course, a consulting practicum (or advanced computing course), and a series of four to six courses that ensure the candidate has studied a subject matter discipline within biomedical research. PhD students are also expected to take high level courses in statistical theory, survival analysis, and high-dimensional and complex data not generally taken by MS students. A sample program can be found at http://www.biostat.med.miami.edu/academics/phd-in-biostatistics/phd-courses

Variations on this basic plan are permitted and decided on a case-by-case basis. Candidates may earn the MS on as part time or full time students.

PhD students are expected to pass a first year exam between their first two years of study and to be examined on a thesis proposal normally at the end of their third year of study.

To obtain detailed program curricula on the Master of Science and PhD in Biostatistics, please contact our offices at the address below or visit our website at http://www.biostat.med.miami.edu/

For further information, please contact:

Division of Biostatistics
Department of Epidemiology and Public Health (R669)
University of Miami Miller School of Medicine
1120 NW 14 Street, Room 1064
Miami, Florida 33136
Tel: (305) 243-6312
Fax: (305) 243-5544
E-mail: mgomez6@biostat.med.miami.edu
Website: http://www.biostat.med.miami.edu/

Biostatistics Course Listing
HUMAN GENETICS AND GENOMICS
Dept. Code: HGG

http://biomed.miami.edu/default.asp?p=212

THE PROGRAM

The graduate program in Human Genetics and Genomics is part of the University-wide interdisciplinary training program that involves faculty from the basic science and clinical departments of the University of Miami. This program aims to train scientists broadly in areas of human genetics and genomics relevant to human health and disease. Modern medicine is increasingly dependent on "genomic literacy" among practitioners and patients, and training the scientists who will work in genomics is an important mission of our program. Individuals earning PhD degrees in human genetics will have various career options, including clinical laboratory (after fellowship training and board certification, for which existing programs are available at the University of Miami), research laboratory, or computational research in academia, healthcare, and the biotechnology industry.

During the first year PIBS curriculum, students will have the opportunity to take two introductory short courses: Variation and Disease and Family Studies and Genetic Analysis. Rotations through faculty laboratories provide students with hands-on experience in various research areas. The rotations also provide the student the background necessary to select their dissertation advisor and area research.

During the second year the curriculum focuses on core coursework in molecular and computational genetics, biostatistics, and seminars and journal clubs. During the second and third years of study, students formulate and defend a dissertation proposal.

During the third year, students choose to pursue one of two tracks within the program: molecular genetics or computational genetics. Course requirements differ slightly between these two paths: students in the molecular genetics track will take Advanced Topics in Molecular Genetics while the Computational Genetics track students take Fundamentals of Genetic Epidemiology and Medical Biostatistics II. All students participate in a one-credit clinical rotation during their third or fourth years, and complete a teaching practicum.

APPLYING TO THE PROGRAM

ADMISSION REQUIREMENTS

All students are admitted through the Program in Biomedical Sciences (PIBS) for the PhD programs in Biochemistry & Molecular Biology, Cancer Biology, Human Genetics & Genomics, Microbiology & Immunology, Molecular Cell & Developmental Biology, Molecular & Cellular Pharmacology, Neuroscience, and Physiology & Biophysics. The PIBS Admissions Committee will review and make decisions on applications after December 15th.

Applicants should have a bachelor's degree in a biological or related discipline (e.g., psychology, chemistry, engineering, physics). Although there are no absolute
prerequisites, courses in general biology, cell/molecular biology, calculus, general physics, organic chemistry, physical chemistry, and biochemistry are encouraged. Strong candidates will have research experience in a laboratory setting (including publications of abstracts and/or papers), an excellent academic record and GRE scores, excellent letters of recommendation from scientists who know the candidate well, and the motivation to pursue state-of-the-art biomedical research.

In the first year all students take a common curriculum to build a solid foundation in biomedical science. The core coursework in the fall ranges from molecules to cells to systems of human physiology. Lectures are balanced by breakout sessions, in which faculty members discuss the primary literature with students in small groups. The core curriculum also offers critical learning opportunities in biostatistics and in using genomic and other databases, as well as education in ethics. Students also meet several times in small groups with experienced faculty mentors to discuss important issues of faculty development. Specific coursework relating to the individual graduate programs is done largely in the second and third semesters of study.

- Students should apply online at: www.biomed.miami.edu

CONTACT INFORMATION

Interdepartmental PhD Program in Human Genetics and Genomics
Miller School of Medicine

William K. Scott, Ph.D.
Program Director
Professor, The Dr. John. T. Macdonald Foundation Department of Human Genetics
University of Miami Miller School of Medicine
1501 N.W. 10th Avenue, BRB 414 (M860)
Miami, FL 33136
Tel: 305-243-2559
Fax: 305-243-2523
Email: bscott@med.miami.edu

Dori McLean
Education Coordinator
The Dr. John. T. Macdonald Foundation Department of Human Genetics
University of Miami Miller School of Medicine
1501 N.W. 10th Avenue, BRB 362 (M860)
Miami, FL 33136
Tel: 305-243-8779 / Fax: 305-243-2523
Email: dmclean@med.miami.edu

Human Genetics & Genomics Course Listing
MICROBIOLOGY AND IMMUNOLOGY
Dept. Code: MIC

www.biomed.miami.edu/micro

Objective

The objective of the Microbiology and Immunology (MIC) graduate Program is to provide multi-faceted training opportunities that lead to competitive postgraduate careers. The program trains students to rigorously investigate central topics in Microbiology or Immunology and their biomedical applications based on a broad comprehension of interdisciplinary science provided by the Program in Interdisciplinary Biomedical Sciences (PIBS) in the first year. Thereafter, the MIC Graduate Program offers students a specialty curriculum that is interactive and discussion based. Furthermore, students are in charge of a research project in either viral or bacterial pathogenesis or in molecular immunology, autoimmunity, tumor immunity or transplantation.

Goals

The goals of the MIC Graduate Program include:

1. Train up creative and critical-thinking scientific minds with a solid understanding of Microbiology or Immunology
2. Train technical laboratory skills necessary to perform experiments in the area of specialization
3. Continue training skills necessary to present scientific findings orally and in writing, including independent research plans as well as competitive manuscripts and grant proposals
4. Prepare students to become the teachers of tomorrow by involving them in the active teaching process of a laboratory class for undergraduate students (Microbiology 301)
5. Nourish the next generation of a networked community of scientists that is well prepared for challenging postgraduate careers in academic and non-academic settings.

ADMISSION REQUIREMENTS

All students interested in Microbiology and Immunology doctoral graduate programs are admitted through the Program in Interdisciplinary Biomedical Sciences (PIBS). Applicants should have a bachelor’s degree in a biological or related discipline (e.g., chemistry, engineering, physics). Although there are no absolute prerequisites, courses in general biology, cell/molecular biology, calculus, physics, chemistry, or biochemistry are encouraged.

Strong candidates will have research experience in a laboratory setting, an excellent academic record and GRE scores, excellent letters of recommendation from scientists who know the candidate well, and the motivation to pursue cutting edge biomedical research. The PIBS Admissions Committee will review and make decisions on complete applications after December 15th. Applicants should apply online at: www.biomed.miami.edu
First year of Graduate Study

In the first semester, students of all graduate programs participate in the common PIBS curriculum for the biological and biomedical sciences. The core curriculum also offers learning opportunities in biostatistics, ethics, graduate development and in databases skills. Coursework relating to Microbiology and Immunology is largely being offered in the second semester.

The first year includes learning more about different programs, performing laboratory rotations with potential dissertation mentors and ultimately selecting both a program and mentor. To facilitate this process students are initially mentored by a senior student and faculty member. The students rotate through at least three laboratories before they chose mentors and formally enter the MIC graduate program. For a listing of our faculty research interest please visit our website: [www.biomed.miami.edu/micro](http://www.biomed.miami.edu/micro).

The Microbiology and Immunology Program

The Microbiology and Immunology Graduate Program accepts only students who wish to pursue the Doctor of Philosophy (Ph.D.) degree. The program accepts an individual with the ultimate goals of developing a creative and critically thorough research scientist. Such development is encouraged through the student’s performance of experimental protocols intended to address outstanding questions rooted in scientifically important areas of research.

Selection of a mentor to supervise dissertation research is major function during the first year of graduate study. Mentor selection is intended to be an experience in decision making in a supportive environment that launch a very intense relationship between a graduate student and a mentor.

After selection of a mentor, the mentor advises the student with regard to both course work and research. He may call on the student’s Progress Committee for additional advice. The MIC Graduate Program Office and its director are available for additional advice.

Degree Requirements

Sixty credits beyond the baccalaureate degree are the minim requirements for the Ph.D. and 36 credits must be of coursework at the graduate level and 24 credits of thesis research must been taken in residence at the University of Miami. In addition students must pass the MIC Qualifying Exam. They will schedule defend their Ph.D. dissertation after at least one peer-reviewed; first-author manuscript with primary experimental data (no review) has been accepted or in presses before the time of their defense, in a reputable journal in the areas of investigation. The Obtaining a doctoral degree in Microbiology and Immunology normally requires five to six years beyond the bachelor’s degree. The degree earned will be a Doctor of Philosophy in Microbiology and Immunology.
Financial Support

All students accepted are awarded a stipend of $27,000 per annum (as of June 1, 2012) and receive a full tuition scholarship. In addition, if students choose the University of Miami graduate student health insurance program, 80% of the individual insurance premium will be covered.

Inquires

Please direct your questions to:
Graduate Program in Microbiology and Immunology
University of Miami
Miller School of Medicine
P.O. Box 016960 (R138)
Miami, Florida 33101
Telephone: 305-243-6655

Visit www.biomed.miami.edu/micro

COMBINED M.D./PH.D. DEGREE

The Microbiology and Immunology Graduate Program participates in the School of Medicine’s MD/PhD Program. Medical students interested in advance research in Microbiology and Immunology should consult the Director of the MIC Graduate Program (Mathias Lichtenheld, M.D., mlichten@med.miami.edu).

Microbiology and Immunology Course Listing
Scientists in the Molecular and Cellular Pharmacology Program make use of the knowledge and techniques of biology, chemistry and physics to study the action of drugs, hormones and neurotransmitters on living systems and, more generally, the mechanisms through which signals are recognized and transduced by cells. The goals of the research in this department are: 1) to identify new targets and pathways for development of pharmaceuticals; 2) to use drugs as tools in the study of basic biological processes; and 3) to develop and study agents that may be beneficial in the treatment of disease.

A variety of technical approaches is used, including genetics, molecular biology, protein biochemistry and biophysics, fluorescence microscopy, immunology, computer modeling, cell culture, imaging, gene expression profiling, proteomics and whole animal studies including transgenic and genetically engineered mouse models. The faculty are a mixture of senior scientists who are recognized leaders in their respective fields and more junior faculty with recent training in state-of-the-art approaches to important biomedical problems.

The Department’s more than 40 graduate students and postdoctoral fellows contribute to the creative and stimulating scientific atmosphere.

Research interests of the faculty include:

Cardiovascular Pharmacology/Signaling/Muscle Contraction:

Investigators in this area study transcriptional regulation of gene expression and intracellular signals associated with the growth and function of the heart. They study ion channels, membrane events, blood vessels, etc. Studies of cardiac muscle contraction and the effect of disease causing mutations in the contractile apparatus of the heart on heart performance and morphology are also being pursued.

Current research areas include structure/function relationships in the proteins of the thin (troponin complex) and thick (myosin) filaments in health and disease, the role of specific ion channels in ventricular hypertrophy and its alleviation, excitation-contraction coupling in skeletal and cardiac muscle, proto-oncogene regulation of cardiac-specific genes, signaling in cardiac myocytes including the characterization of multimolecular enzyme complexes, apoptosis during myocardial ischemia, and the potential of stem cell based therapy for cardiac disease. A new study has been launched to investigate the effect of bone marrow stem cells in cardiac repair. Research in this area is in part supported by a National Heart Lung and Blood Institute Cardiovascular Pharmacology Training Grant. The students will have the opportunity to receive training in specific cardiovascular techniques utilized in the Program as well as attend cardiovascular journal club to learn about new findings in the cardiovascular field.
Neuropharmacology/Neuroscience:

Investigators in this area study the development, function, pharmacology, and diseases of the nervous system.

Current research interests include neuronal signaling through G-proteins, Ca$^{2+}$, and cyclic nucleotides, growth and guidance of axons during development and regeneration after injury, molecular control of dendrite development, control of physiological functions by the nervous system; molecular mechanisms and cell biology of olfaction and phototransduction; the genetic and cellular basis of neural development and degeneration using the fruit fly *Drosophila melanogaster* as a model system.

Cell Biology/Cancer:

Investigators in this area study cell cycle control and cancer, gene expression, mechanisms of hormone action, signal transduction, cytoskeleton, membrane transport, stem cells, and novel therapeutics.

Current research interests include steroid hormone regulation of gene expression and cell proliferation; cell cycle checkpoints during DNA replication; protein trafficking including endocytosis and exocytosis; control of cell polarity and morphogenesis; cilia in pulmonary function; molecular basis of human lymphoma; endocrine-related cancers including prostate and breast; stem cell maintenance and therapy; stem cell differentiation in hematopoiesis and physiochemical and metabolic aspects of drug design.

Model Systems:

Many investigators are using model organisms for their studies. These include transgenic and knock-out/knock-in mouse models Xenopus, Drosophila and yeast models. Yeast and Drosophila are important models because of the powerful molecular and genetic approaches and tools available. Xenopus provides a unique system for studying development and for protein expression and analysis. These systems are being used to study fundamental processes such as apoptosis, cell cycle, signal transduction, membrane dynamics, cytoskeleton, cell polarity, olfaction, development of the cardiovascular system, neurogenesis and neuronal degeneration. All of these processes are conserved in humans, so these systems serve as important models of human diseases. Investigators are also using these systems to screen for therapeutic agents and to identify targets of toxins and other natural, synthetic or pharmacologically relevant compounds.

Training Program:

In the first year, students receive a solid foundation in biomedical science. The core coursework ranges from molecules to cells to systems of human physiology. Lectures are balanced by breakout sessions, in which faculty members discuss the primary literature with students in small groups. The core curriculum also offers critical learning opportunities in biostatistics and in using genomic and other databases, as well as education in ethics. Students also meet several times in small groups with experienced faculty mentors to discuss important issues of student development. In subsequent semesters, students take core courses encompassing mechanisms of drug action, neuropharmacology, cardiovascular pharmacology and intracellular...
signal transduction. A variety of elective courses are offered by this department and others.

Students begin their dissertation research at the end of the first year and complete their course requirements in the second year. In subsequent years, students devote their efforts to original thesis research. The department sponsors the visits of internationally-known scientists, who discuss their research in formal seminars and meet with students and faculty. Weekly intradepartmental seminars keep students abreast of new developments within the School of Medicine.

ADMISSION REQUIREMENTS

All students are admitted through the Program in Biomedical Sciences (PIBS) for the PhD programs in Biochemistry & Molecular Biology, Cancer Biology, Human Genetics & Genomics, Microbiology & Immunology, Molecular Cell & Developmental Biology, Molecular & Cellular Pharmacology, Neuroscience, and Physiology & Biophysics. The PIBS Admissions Committee will review and make decisions on applications after December 15th.

Applicants should have a bachelor’s degree in a biological or related discipline (e.g., psychology, chemistry, engineering, physics). Although there are no absolute prerequisites, courses in general biology, cell/molecular biology, calculus, general physics, organic chemistry, physical chemistry, and biochemistry are encouraged.

Strong candidates will have research experience in a laboratory setting (including publications of abstracts and/or papers), an excellent academic record and GRE scores, excellent letters of recommendation from scientists who know the candidate well, and the motivation to pursue state-of-the-art biomedical research.

The first year is also focused on choosing a program and a dissertation mentor. All students are initially mentored by a senior student and a faculty member to facilitate this process. In the 1st year, students rotate through at least 3 laboratories chosen from any of the biomedical sciences graduate faculty. At the end of the 1st year students choose mentors and formally enter individual graduate programs.

- Students should apply online at: www.biomed.miami.edu

For information concerning the Pharmacology Program, contact

Director of Graduate Studies
Department of Molecular and Cellular Pharmacology
University of Miami School of Medicine
P.O. Box 016189 R-189
Miami, Florida 33101
Phone: (305) 243-3419
Fax: (305) 243-3420
E-mail: mcp@med.miami.edu
www.biomed.miami.edu/pharm
THE REQUIREMENTS FOR THE PH.D. DEGREE IN MOLECULAR AND CELLULAR PHARMACOLOGY

These consist of 36 credit hours of graduate courses and seminars and 24 credits of Thesis Research. Students are required to pass a qualifying examination at the completion of their second year before undertaking Thesis Research at an intensive level.

The recruitment and training of applicants from underrepresented minority groups is an important goal of the Program.

Pharmacology Students supported by the National Institutes of Health training program must be United States citizens or permanent residents.

Other sources of support may be available on a limited basis for foreign applicants.

Molecular and Cellular Pharmacology Course Listing
MOLECULAR CELL AND DEVELOPMENTAL BIOLOGY  
Dept. Code: MDB

www.biomed.miami.edu/cellbio

The graduate program in Molecular Cell and Developmental Biology is an interdepartmental program, providing a wide range of research opportunities, comprised of faculty members from the Departments of Cell Biology, Ophthalmology, Surgery, Medicine, Neurology, Neurosurgery, Molecular and Cellular Pharmacology, Urology, Microbiology and Immunology.

Students have the opportunity to do research in the many areas of modern cell, molecular and developmental biology. Research topics including the cytoskeleton, cell surface molecular biology, stem cells, lens, corneal and retinal biology, protein processing and sorting, signal transduction, airway biology, regulation of gene expression in development, podocyte biology, cancer biology, neuromuscular development, malignant transformation, growth factors, epithelial cell biology, organogenesis and tissue repair, pattern formation in early development, RNA localization, mitochondrial molecular biology and cancer therapeutics.

The primary objective of this interdisciplinary graduate program is to prepare students for careers as independent, Ph.D. level researchers and educators, in both academic institutions and in the biotechnology industry and other venues.

Applicants are accepted only for the Ph.D. or combined M.D./Ph.D. degrees.

DEGREE REQUIREMENTS

Minimum credit requirements for the Ph.D. degree are set by the University at 36 course credits (including specific required courses) and 24 credits hours of research. The course credits must be earned in graduate level (500 and above) courses. Elective courses may be taken from the graduate courses offered by this program, or from a large variety of advanced courses offered by other departments at the University of Miami.

Typical coursework includes: Interdisciplinary Biomedical Studies, Seminar, Journal Club, Biological Macromolecules, Professional Skills and Ethics, Tumor Biology, Molecular Genetics, Developmental Biology, Advanced Molecular Cell Biology, Biostatistics Workshop and Histology. The interdisciplinary biomedical studies course covers fundamental topics of cellular and molecular biology, biochemistry, cellular physiology, neurobiology, and immunology.

Other requirements include participation in a departmental seminar series, a journal club, and three semesters of advanced topics courses.

ADMISSION REQUIREMENTS

All students are admitted through the Program in Biomedical Sciences (PIBS) for the PhD programs in Biochemistry & Molecular Biology, Cancer Biology, Human Genetics & Genomics, Microbiology & Immunology, Molecular Cell & Developmental Biology,
Molecular & Cellular Pharmacology, Neuroscience, and Physiology & Biophysics. The PIBS Admissions Committee will review and make decisions on applications after December 15th.

Applicants should have a bachelor’s degree in a biological or related discipline (e.g., psychology, chemistry, engineering, physics). Although there are no absolute prerequisites, courses in general biology, cell/molecular biology, calculus, general physics, organic chemistry, physical chemistry, and biochemistry are encouraged. Previous research experience and publications are considered a plus.

Strong candidates will have research experience in a laboratory setting (including publications of abstracts and/or papers), an excellent academic record and GRE scores, excellent letters of recommendation from scientists who know the candidate well, and the motivation to pursue state-of-the-art biomedical research.

In the first year all students take a common curriculum to build a solid foundation in modern biomedical science. The core coursework in the fall includes topics ranging from molecules to cells to systems of human physiology. Lectures are balanced by breakout sessions, in which faculty members discuss the primary literature with students in small groups. The core curriculum also offers critical learning opportunities in biostatistics and in using genomic and other databases, as well as education in ethics. Students also meet several times in small groups with experienced faculty mentors to discuss important issues of scientific and career development. Specific topic coursework relating to the individual graduate student research programs is done largely in the second and third semesters of study.

The first year is also focused on choosing a dissertation mentor and a program. All students are initially mentored by a senior student and a faculty member to facilitate this process. In the 1st year, students do research rotations in at least 3 laboratories chosen by the student from any of the biomedical sciences graduate faculty. At the end of the 1st year students choose mentors and formally enter individual graduate programs.

Students should apply online at: www.biomed.miami.edu

**Molecular Cell and Developmental Biology Program Core Curriculum:**

- MDB601 Seminar/Journal Club/Student presentations
- MDB651 Advanced Molecular Cell Biology
- MDB652 Current Topics in Mammalian Development
- MDB653 Histology
- MDB665 Tumor Biology or equivalent courses in Neuronal Cell Biology / Cell Biology aspects of human disease.
- MDB680 Research Ethics
- IBS683 Professional Skills and Ethics I
- IBS620 Scientific Writing I
- EPH501 Biostatistics
- MDB730 Doctoral Dissertation (pre-candidacy)
- MDB740 Doctoral Dissertation (post-candidacy)
- MDB750 Research in Residence
The program strongly encourages attendance to scientific meetings and travel awards for this purpose are made available to the students whenever possible.

Inquiries should be directed to:
Maria Penton
Graduate Studies Committee
Department of Cell Biology
University of Miami Miller School of Medicine
P.O. Box 016960
(R-124)
Miami, FL 33101
305/243-6691
e-mail to mpenton@med.miami.edu
or visit www.biomed.miami.edu/cellbio

**COMBINED M.D.-PH.D. DEGREE**

The Department participates in the Miller School of Medicine’s combined M.D.-Ph.D. Program.

The curriculum will be tailored to the needs of the individual student.

[Molecular Cell and Developmental Biology Course Listing](#)
The Neuroscience Program is an interdisciplinary program established in 1988 leading to the Ph.D. in Neuroscience.

The program aims to train highly-qualified individuals for independent research and teaching careers in the Neurosciences.

More than 80 participating faculty are located in several departments and schools, including Cell Biology and Anatomy, Molecular and Cellular Pharmacology, Physiology and Biophysics, Biology, Bioengineering, Psychology, The John P. Hussman Institute for Human Genomics, and the Rosenstiel School of Marine and Atmospheric Sciences, as well as several clinical departments such as Neurological Surgery, Neurology, Ophthalmology, Pathology, Physical Therapy, and Psychiatry.

Neuroscience Program faculty pursue a wide variety of research interests, including cellular and molecular mechanisms involved in signal transduction, gene expression in electrically excitable cells, synapse formation, neuronal growth and survival, integrative neuroscience, neuroimmunology, stroke, neuronal regeneration, autonomic control, brain metabolism and cerebral blood flow, degenerative changes within specific neural pathways in Parkinson’s and Alzheimer’s diseases, and genetic analysis of neurological disorders.

ADMISSION REQUIREMENTS

All students are admitted through the Program in Biomedical Sciences (PIBS) for the PhD programs in Biochemistry & Molecular Biology, Cancer Biology, Human Genetics & Genomics, Microbiology & Immunology, Molecular Cell & Developmental Biology, Molecular & Cellular Pharmacology, Neuroscience, and Physiology & Biophysics. The PIBS Admissions Committee will review and make decisions on applications after December 15th.

Applicants should have a bachelor’s degree in a biological or related discipline (e.g., psychology, chemistry, engineering, physics). Although there are no absolute prerequisites, courses in general biology, cell/molecular biology, calculus, general physics, organic chemistry, physical chemistry, and biochemistry are encouraged.

Strong candidates will have research experience in a laboratory setting (including publications of abstracts and/or papers), excellent academic records and GRE scores, excellent letters of recommendation from scientists who know the candidate well, and the motivation to pursue state-of-the-art biomedical research.

In the first year, all students take a common curriculum to build a solid foundation in biomedical science. The core coursework in the fall ranges from molecules to cells to systems of human physiology. Lectures are balanced by breakout sessions in which faculty members discuss the primary literature with students in small groups. The core curriculum also offers critical learning opportunities in biostatistics and in using genomic and other databases, as well as education in ethics. Students also meet
several times in small groups with experienced faculty mentors to discuss important issues of faculty development. Specific coursework relating to the individual graduate programs is done largely in the second and third semesters of study. The first year is also focused on choosing a program and a dissertation mentor. All students are initially mentored by a senior student and a faculty member to facilitate this process. In the 1st year, students rotate through at least 3 laboratories chosen from any of the biomedical sciences graduate faculty. At the end of the 1st year, students choose mentors and formally enter individual graduate programs.

- Students should apply online at: www.biomed.miami.edu

THE NEUROSCIENCE PROGRAM

Graduate training is the major goal of the program, with emphasis on cellular, molecular, and genetic approaches to Neuroscience.

A single core curriculum provides the didactic scaffold of the program. This curriculum consists of courses in Developmental Neuroscience Membrane Biophysics, Introductory Neuroscience, Neural Systems, and Neuroanatomy. The core courses are supplemented with a variety of Special Topics Short Courses. Students also attend research seminars and a scientific journal club.

The Neuroscience Steering Committee guides the students, overseeing their coursework, until they have passed their qualifying exams. From then on, their progress is supervised by individually-tailored dissertation committees. The Neuroscience Program also participates in the School of Medicine’s MD/PhD combined degree program www.biomed.miami.edu/mdphd.

REQUIREMENTS FOR A PH.D. DEGREE IN NEUROSCIENCE

Students are required to complete 36 credit hours of graduate courses and seminars, including at least 18 credit hours in Neuroscience and 24 credits of Dissertation Research.

Students are required to pass a qualifying examination during their second year before undertaking Dissertation Research at an intensive level.

Inquiries should be directed to:

University of Miami Miller School of Medicine
Locator R-50
PO BOX 011351
Miami, Florida 33101
Tel: 305-243-3368
FAX (305) 243-3593
E-mail: neuroscience@miami.edu
Web: www.biomed.miami.edu/neuro
RESEARCH AREAS:

1. BEHAVIORAL NEUROBIOLOGY
2. DEVELOPMENTAL NEUROBIOLOGY
3. CELL/MOLECULAR NEUROBIOLOGY
4. CNS INJURY AND REPAIR
5. GENETIC ANALYSIS OF NEUROLOGICAL DISORDERS
6. NEUROLOGICAL DISORDERS
7. PSYCHIATRIC DISORDERS
8. SENSORY NEUROBIOLOGY
9. SYNAPSES
10. TRANSMITTERS AND RECEPTORS

Neuroscience Course Listing
PHYSICAL THERAPY  
Dept. Code: PTS  
www.pt.med.miami.edu

The Department of Physical Therapy is committed to providing quality educational experiences that enable its graduates to effectively carry out the expanding responsibilities of physical therapists as autonomous health care providers practicing in preventive, evaluative, maintenance, acute care and rehabilitation settings, and in educational and research environments.

The individual and collective efforts of the members of the Physical Therapy faculty are directed toward attaining specific goals and objectives as expressed in the philosophic statement of the American Physical Therapy Association.

The Mission of the Department of Physical Therapy (revised in December, 2000; re-affirmed in 2012) in accordance with the Mission of the Miller School of Medicine is to provide excellence in physical therapist education, to expand evidence-based practice of physical therapy through research, to provide high quality care to all who need it, and to be a community partner.

ADMISSION REQUIREMENTS

DOCTOR OF PHYSICAL THERAPY (entry level D.P.T.)

Applicants should have a baccalaureate degree in a related field and 3.0, or “B” average or better in the following courses:  
**English Composition/ Writing intensive course** (3 semester or 5 quarter hours);  
**Introduction to Statistics** (3 semester or 5 quarter hours);  
**Psychology** (3 semester or 5 quarter hours);  
**General Biology** (3 semester or 5 quarter hours);  
**General Chemistry I and II each with Lab** (8 semester or 12 quarter hours);  
**General Physics I and II each with Lab** (8 semester or 12 quarter hours);  
**Human Anatomy** (3 semester or 5 quarter hours);  
**Human Physiology** (3 semester or 5 quarter hours) or **Combined Anatomy and Physiology I &II** (6 semester or 9 quarter hours).

I. APPLICATION PROCEDURE  
We are now accepting applications only thru Physical Therapist Centralized Application Service (PTCAS), go to www.ptcas.org to apply.

A. Application deadline is October 15; We encourage you to apply early.  
Classes begin in May of each year. Application requirements consist of the following:

1. Submission of all application materials to PTCAS. Completion of prerequisites, with a minimum GPA of 3.0 on a 4.0 scale.

2. Demonstration of knowledge concerning the physical therapy profession by submitting:
   a minimum of 100 hours of first-hand observation and/or work experience related to the practice of physical therapy.
This experience must be substantiated in writing by a registered/licensed physical therapist. The name and email of the physical therapist(s) is required for verification.

3. Submission of three to four (3-4) letters of recommendation from people who can address both the applicant’s moral character and potential as a physical therapist.
   At least one letter must be written by a registered/licensed physical therapist, and one or more from faculty.

4. An on-site interview is required and will be offered to those applicants who have met the admission criteria.

5. Graduate Record Exam (GRE). Applicants who took the GRE before July 31, 2011 must score a minimum of 1000 on the verbal and quantitative sections combined. As of August 2011 the GRE exam and its scoring scale have changed significantly. Please visit the ETS website at: www.ets.org/s/gre/pdf/concordance_information.pdf for the official ETS Concordance Table. Applicants must score a minimum of 147 on the quantitative section and 149 on the verbal section. A minimum score of 3.0 on the analytical section is also required.

6. International students are to complete the PTCAS application and submit official transcripts to the DPT program instead of PTCAS. Transcripts that are not in English must include an official translation. International applicants must have all transcripts evaluated by the University of Miami’s Office of International Admissions before they can be considered for graduate study. Any transcript not in English must be submitted with an official translation. International applicants must meet ALL the necessary requirements to qualify for a student visa.

For more information contact:
7. Admissions Office
8. Department of Physical Therapy
9. 5915 Ponce de Leon Blvd., 5th Floor
10. Coral Gables, FL 33146
11. phone 305-284-4535
12. email: physicaltherapy@miami.edu
   www.pt.med.miami.edu

DOCTOR OF PHILOSOPHY IN PHYSICAL THERAPY (Ph.D.)

Application requirements: Applicants to the Physical Therapy PhD Studies Program must have a clinical degree in physical therapy from an accredited physical therapy program and be eligible for licensure to practice physical therapy in the United States. Students enrolled in the PhD in Physical Therapy program at the University of Miami work closely with a faculty mentor from their first days in the program. As a first step in the application process, the applicant must identify a track of interest and contact a faculty mentor in the selected track. Students are admitted to the program upon endorsement of a faculty mentor and completion of all admission requirements, with final selection made by the PhD Studies
Committee. Stipend and tuition support is potentially available for qualified applicants.

- **Motor Control:** Contact Edelle Field-Fote PhD, PT edee@miami.edu
- **Musculoskeletal Prosthetics and Amputee Rehabilitation:** Contact Robert Gailey, PhD, PT rgailey@miami.edu
- **Outcomes Research:** Contact Kathryn Roach PhD, PT keroach@miami.edu OR Neva Kirk-Sanchez, PhD, PT nkirksanchez@miami.edu
  The applicant must meet all the general admissions requirements of the University of Miami Graduate School. Additionally, stipulations include:
  - Direct entry into the PhD program is dependent upon having any of the degrees below:
    - An entry-level Master’s Degree in Physical Therapy
    - An advanced Master’s Degree with a Bachelor’s Degree in Physical Therapy
    - A Bachelor’s Degree in Physical Therapy.
  - An applicant with a Bachelor's Degree in Physical Therapy, though able to commence course work in the PhD Program, will be required to complete the credits to equal that of Advanced Master’s Degree in Physical Therapy before final admission to the PhD Program.
  - Official Transcripts of all college work.
  - Three completed recommendation forms with at least one form completed by a physical therapist.
  - A letter indicating career goals and objectives.
  - Licensure or eligibility for licensure, as a physical therapist in the State of Florida (must be licensed within 1 year of admission).
  - GRE, The University of Miami requires a minimum of 1000 on the verbal and quantitative section with a minimum of 400 on the verbal section and a minimum of 4.0 on the analytical section.

Applicants who took the GRE before July 31, 2011 must score a minimum of 1000 on the verbal and quantitative sections combined. As of August 2011 the GRE exam and its scoring scale have changed significantly. Please visit the ETS website at: www.ets.org/s/gre/pdf/concordance_information.pdf for the official ETS Concordance Table. Graduate Admissions will be using this concordance table when reviewing exam scores. Applicants must score a minimum of 147 on the quantitative section and 149 on the verbal section. A minimum score of 4.0 on the analytical section is also required. International applicants must submit a complete application and have all transcripts evaluated by the University of Miami’s Office of International Admissions before they can be considered for graduate study. Any transcript not in English must be submitted with an official translation.

The research areas of the faculty are diverse, reflecting the clinical and scientific emphasizes areas of the faculty. Please refer to the Faculty Section for specifics.

For more information contact:
Dr. Edelle Field-Fote, Associate Chair for PhD Studies
Department of Physical Therapy
5915 Ponce de Leon Blvd., 5th Floor
Coral Gables, FL 33146
phone  305-284-4535
email:  edee@miami.edu
DEGREE PROGRAMS

DOCTOR OF PHYSICAL THERAPY (entry level D.P.T.)

The Department offers the clinical Doctor of Physical Therapy (DPT). The DPT program recognizes the importance of in-depth basic and applied science knowledge and the humanities. As such, the curriculum is carefully sequenced to allow students to develop skills in both classroom and clinical settings.

Faculty also understand the importance of presenting problem-solving skills in conjunction with fundamental physical therapy concepts so that students will develop the professional attitudes and insights required for sustained and continued growth throughout their careers.

The entry-level doctoral program (DPT) is offered under the auspices of the Department of Physical Therapy, University of Miami Miller School of Medicine.

DOCTOR OF PHILOSOPHY IN PHYSICAL THERAPY (Ph.D.)

The University of Miami Doctor of Philosophy in Physical Therapy program develops physical therapist students for leadership positions in academic and research settings. Along with guiding students in the development of requisite knowledge and skills, the program promotes professional socialization into the role of academic faculty. We believe preparation to teach and undertake research in a physical therapy curriculum at the university level requires excellence in three dimensions: 1) Expertise in a specified content area; 2) Advanced knowledge and skill in research methods, design, and implementation of analysis and communication of results; and 3) Proficiency in instructional design, teaching methods, and evaluation. The successful integration of these three dimensions, each complex in its own right, provides the means for the student to develop expertise in testing, analyzing, researching, and teaching about disorders that interfere with function. Unifying these three core areas is the process of socialization to the role of a faculty member, including an awareness of academic responsibilities and sensitivity to the needs of the adult learner.

In keeping with this philosophy, students develop breadth of knowledge through completion of coursework from three basic core areas: Concentration Core, Research Core, and Education Core. They develop depth by completing elective courses with the intent to build expertise in their respective areas of concentration. The successful graduate of this program will have the requisite knowledge and skills to integrate research findings and scientific theory with clinical observations. On this basis, the graduate will be prepared to perform original research aimed at developing new knowledge to enhance the scientific basis of clinical practice and theoretical principles that will advance the profession of physical therapy. The program offers opportunities for the student to gain skill in communicating theories, concepts and research findings and to experience the roles and responsibilities of an academic faculty member. Students complete a dissertation project in which they develop and conduct a unique and significant research investigation with the guidance of a Physical Therapy faculty member as research advisor.
DEGREE REQUIREMENTS

DOCTOR OF PHYSICAL THERAPY (D.P.T.)

To receive the Doctor of Physical Therapy degree, the candidate must:

1. Complete all coursework (105 credits) as required with an overall GPA of 3.0 or better.
2. Complete at least 3 credits of Elective coursework, in addition to the 105 credits.
3. Successfully complete the clinical internships (I-IV) required.

The University of Miami, Department of Physical Therapy has affiliations with 350 clinical sites locally and throughout the country.

Distant internships may incur additional expenses for the student.

DOCTOR OF PHILOSOPHY IN PHYSICAL THERAPY (Ph.D.)

The curriculum, for all three core content areas (Musculoskeletal, Motor Control, and Outcomes Research) consist of:

- 19 - 21 credits in a core concentration area (i.e., Motor Control, or Outcomes Research) 12 credits in core education courses,
- 12 credits in core research courses,
- 6 - 21 credits in electives in area of concentration and
- 12 credits of Doctoral dissertation for a total of 60-75 credits.
- Credits may vary depending on educational background of applicants.

Physical Therapy Course Listing
PHYSIOLOGY AND BIOPHYSICS
Dept. Code: PHS

www.biomed.miami.edu/physiol

The Department offers training leading to the Ph.D. degree in Physiology and Biophysics.

Inquiries are also invited from those wishing to pursue a dual, M.D./Ph.D., degree program.

The M.S. degree is normally bypassed in the Department.

Physiology and Biophysics studies the molecular basis for fundamental processes related to life such as:

How does the brain work?
How do we remember?
How does the heart beat?
How do we breathe?
How do we see?
How do we move?

Research facilities and guidance for graduate and postdoctoral work are available in developmental neurobiology, sensory receptor mechanisms, axonal electrophysiology, ionic mechanism of the nerve impulse, electrophysiological and molecular aspects of synaptic and neuromuscular transmission, ion channels in nerve and muscle cell membranes, metabolic aspects of nervous function, molecular neuroscience, neuroimmunology, protein structure-function studies, molecular recognition, ligand-receptor interactions, neuropeptides, axonal growth, neurotrophic factors, cytokines, gene targeting, transgenic mice, neuronal apoptosis, nerve regeneration, molecular adhesion, and regulation of muscle contraction.

As described below, entrance into all graduate programs at the Miller School of Medicine is now through the Program in Biomedical Sciences (PIBS).

After entry into the Physiology and Biophysics program students take courses PHS 510, 511, 512, 641, and 642 unless they have mastered the equivalent of these. In planning their programs, students should take advantage not only of courses given by this Department but also of pertinent course offerings of other departments. Once the student has a sponsor, who, in consultation with a supervisory committee appointed when the dissertation project is chosen, provides guidance.

Since the Department aims to prepare its graduates for careers in research and teaching, all students in the Department are expected to participate in some teaching. Fellowships are general awarded to accepted students. Traineeships are also available under an NIH supported Training Grant.
ADMISSION REQUIREMENTS

All students are admitted through the Program in Biomedical Sciences (PIBS) for the PhD programs in Biochemistry & Molecular Biology, Cancer Biology, Human Genetics & Genomics, Microbiology & Immunology, Molecular Cell & Developmental Biology, Molecular & Cellular Pharmacology, Neuroscience, and Physiology & Biophysics. The PIBS Admissions Committee will review and make decisions on applications after December 15th.

Applicants should have a bachelor’s degree in a biological or related discipline (e.g., psychology, chemistry, engineering, physics). Although there are no absolute prerequisites, courses in general biology, cell/molecular biology, calculus, general physics, organic chemistry, physical chemistry, and biochemistry are encouraged. Strong candidates will have research experience in a laboratory setting (including publications of abstracts and/or papers), an excellent academic record and GRE scores, excellent letters of recommendation from scientists who know the candidate well, and the motivation to pursue state-of-the-art biomedical research.

In the first year all students take a common curriculum to build a solid foundation in biomedical science. The core coursework in the fall ranges from molecules to cells to systems of human physiology. Lectures are balanced by breakout sessions, in which faculty members discuss the primary literature with students in small groups. The core curriculum also offers critical learning opportunities in biostatistics and in using genomic and other databases, as well as education in ethics. Students also meet several times in small groups with experienced faculty mentors to discuss important issues of faculty development. Specific coursework relating to the individual graduate programs is done largely in the second and third semesters of study.

• Students should apply online at: www.biomed.miami.edu

The first year is also focused on choosing a program and a dissertation mentor. All students are initially mentored by a senior student and a faculty member to facilitate this process. In the 1st year, students rotate through at least 3 laboratories chosen from any of the biomedical sciences graduate faculty. At the end of the 1st year students choose mentors and formally enter individual graduate programs.

REQUIREMENTS FOR THE PH.D. DEGREE INCLUDE:

36 graduate credits in courses and seminars and an additional 24 credits in dissertation research.

Satisfactory performance on both written and oral parts of a qualifying examination that will require demonstrating mastery of relevant physiological principles and methods. The examination must be passed not later than 24 months after enrollment in the Department. Up to 12 transfer credits earned elsewhere may be acceptable toward Ph.D. requirements.

The Ph.D. dissertation research must be original work of a quality acceptable for publication in a first-rate scientific journal.

For further details on requirements, the general information sections of this Bulletin should be consulted.
Prospective applicants are urged to write early to the Department for further information on the Department’s activities, training resources, requirements, and financial aids.

Address inquiries to:

Dr. D. Landowne, Chair
Graduate Studies Committee
Department of Physiology and Biophysics
P. O. Box 016430
Miami, FL 33101
305/243-6821
305/243-5931 (fax)
email to physiology@miami.edu or visit http://biomed.miami.edu/physiol

M.D./PH.D. PROGRAMS

Students interested in pursuing careers in academic medicine or, more generally, in medically-related research may wish to enter a dual (M.D./Ph.D.) degree program. Details about this program and application procedures are obtainable from the Graduate Studies Committee Chairman at the address given above.

Physiology and Biophysics Course Listing
PHILLIP AND PATRICIA FROST SCHOOL OF MUSIC – GRADUATE
www.music.miami.edu/gradstudies/

DEPARTMENTS
- DEPARTMENT OF INSTRUMENTAL PERFORMANCE - Dept. Code: MIP
- DEPARTMENT OF KEYBOARD PERFORMANCE - Dept. Code: MKP
- DEPARTMENT OF MUSIC EDUCATION AND MUSIC THERAPY - Dept. Code: MED
- DEPARTMENT OF MUSIC MEDIA AND INDUSTRY - Dept. Code: MMI
- DEPARTMENT OF MUSIC THEORY-COMPOSITION - Dept. Code: MTC
- DEPARTMENT OF MUSICOLOGY - Dept. Code: MCY
- DEPARTMENT OF STUDIO MUSIC AND JAZZ - Dept. Code: MSJ
- DEPARTMENT OF VOCAL PERFORMANCE - Dept. Code: MVP

ADMISSION REQUIREMENTS
I. Students wishing to enroll for graduate credit in the Frost School of Music, whether or not they plan to become candidates for a degree, must fulfill the requirements for admission to the Graduate School listed elsewhere in the Bulletin.

II. In addition to these general requirements, the student must meet the following requirements of the Frost School of Music:

A. The Graduate Record Examination. (G.R.E. not required for Master of Music in Performance, Jazz Performance, and Studio Jazz Writing).

B. An on-campus audition is required of all D.M.A. applicants in Performance; M.M. applicants in Performance may audition in person or by recording. Prospective students for any major are encouraged to seek an interview with members of the University of Miami staff when they are serving as guest conductors and clinicians in various parts of the country.

C. An interview either on or off campus is required of all prospective Ph.D. students and D.M.A. students in composition and jazz composition.

D. Prospective Composition majors, Media Writing and Production majors, and Studio Jazz Writing majors are required to submit a portfolio of original compositions.

E. A writing sample of a major paper or thesis is required of applicants in Choral Conducting, Music Therapy, Musicology, Vocal Pedagogy, and Vocal Performance.

F. Prospective Ph.D. students in Music Education are required to show evidence of successful teaching experience and provide a writing sample of a major paper or thesis.

G. Placement Examination: During the orientation prior to registration, new master’s and doctoral students are required to take placement tests for entrance to graduate courses. Placement auditions are also required in performance before assignment to ensembles. Courses to remedy deficiencies indicated by these examinations must be taken at the earliest opportunity. (A student is presumed deficient in any area in which he/she does not take the entrance examinations.)
DEGREE PROGRAMS

Doctor of Philosophy – Deg. Code: PHD
   Music Education – Conc. Code: MED

Doctor of Musical Arts – Deg. Code: DMA
   Collaborative Piano – Conc. Code: MKPA
   Choral Conducting – Conc. Code: MCDC
   Composition – Conc. Code: MTC
   Instrumental Conducting – Conc. Code: MCDI
   Instrumental Performance – Conc. Code: MIP
   Jazz Composition – Conc. Code: MSJC
   Jazz Performance (Instrumental – Conc. Code: MSJI or Vocal – Conc. Code: MSJV)
   Multiple Woodwinds – Conc. Code: MIPW
   Piano Performance – Conc. Code: MKP
   Vocal Pedagogy and Performance – Conc. Code: VPED
   Vocal Performance – Conc. Code: MVP

Master of Arts – Deg. Code: MA
   Arts Presenting – Conc. Code: MPR

Master of Music – Deg. Code: MM
   Collaborative Piano – Conc. Code: MKPA
   Choral Conducting – Conc. Code: MCDC
   Composition – Conc. Code: MTC
   Digital Arts and Sound Design – Conc. Code: MTCD
   Instrumental Conducting – Conc. Code: MCDI
   Instrumental Performance – Conc. Code: MIP
   Jazz Pedagogy – Conc. Code: JPED
   Jazz Performance (Instrumental – Conc. Code: MSJI or Vocal – Conc. Code: MSJV)
   Media Writing and Production – Conc. Code: MWP
   Multiple Woodwinds – Conc. Code: MIPW
   Music Business and Entertainment Industries – Conc. Code: MBEI
   Music Education – Conc. Code: MED
   Music Therapy – Conc. Code: MTY
   Musicology – Conc. Code: MCY
   Piano Performance – Conc. Code: MKP
Studio Jazz Writing – Conc. Code: SJW
Vocal Performance – Conc. Code: MVP

Master of Science – Deg. Code: MSMET
Music Engineering – Conc. Code: MUE

Artist Diploma in Performance – Deg. Code: AD
Instrumental Conducting – Conc. Code: MCDI
Instrumental Performance – Conc. Code: MIP
Piano Performance – Conc. Code: MKP
Vocal Performance – Conc. Code: MVP

DEGREE REQUIREMENTS

DOCTOR OF MUSICAL ARTS (DMA)

The purpose of the Doctor of Musical Arts is to train the most promising musicians at the highest musical and intellectual level for prominent careers in their field. The degree stresses excellence in performance, composition, scholarship, and teaching. By its nature, the Doctor of Musical Arts provides opportunities for students with proven accomplishment to prepare themselves for the professorship.

For the Doctor of Musical Arts in Performance, Keyboard Performance and Pedagogy, Composition, Jazz Composition, Jazz Performance, Vocal Pedagogy and Performance, and Conducting, the candidate must meet all the general requirements for the Ph.D. degree with respect to residence, research tool requirements, total minimum hours, and written and oral examinations. The major differences between the D.M.A. and the Ph.D. are the creative efforts and performance that replace the dissertation requirements in the D.M.A. degree program. There will also be some variation in the research tool requirements in order that they apply in a more practical way to the needs of students.

ENTRANCE REQUIREMENTS

Selection of student based on:

1. Graduate Record Examination (Aptitude portion)
2. Academic record
3. Recommendations
4. Personal audition (Performance Majors); preliminary video tape required for instrumental conducting
5. Samples of musical composition (Composition Majors)
6. Writing Sample (major paper or thesis; Choral Conducting and Vocal Performance Majors)
PLACEMENT EXAMINATIONS

During the three days before registration, all new doctoral students are required to take examinations in music history and literature that will serve as placement tests or prerequisites for entrance to graduate courses. Courses to remedy deficiencies indicated by these examinations must be taken at the earliest opportunity.

DOCTORAL COMMITTEE

The committee is appointed when the student is formally admitted to a doctoral program. It will consist of a minimum of four members, three from the area of concentration and a minimum of one from the areas of Music Theory, Musicology, or Music Education (an approved member from a department outside of the Frost School of Music is possible). A committee may be expanded beyond the minimum number of members based on the needs of the student to a maximum of six. Of these, three (including the committee chairman) shall be regular members of the Graduate Faculty.

Responsibilities of the committee shall include the following:

1. Overseeing all of the students work prior to admission to candidacy, including academic program planning and advising as to recital repertoire.

2. Advising the student regarding relevant research competencies (tools) and ensuring that the student demonstrates these competencies prior to admission to candidacy.

3. Adjudging the quality of the student’s recitals, pedagogy presentations or compositions.

4. Overseeing the doctoral essay or lecture recital, including approval of the topic and proposal, supervision of the writing of the essay or lecture recital, assessment of the quality of the final essay or lecture recital, and the quality of the final essay defense. (In cases where special faculty expertise is needed for a particular essay topic, changes in membership of the doctoral committee may be made. Membership of the essay committee is recommended by the department or program concerned, and approved and appointed by the Dean of the Graduate School.)

RESEARCH TOOL REQUIREMENTS

The candidate will be required to show competency in the research tools recommended by the student’s doctoral committee, which is responsible for ensuring that the tools are relevant to the student and that procedures for demonstration of the competencies are appropriate. Research tools must be demonstrated and documented prior to admission to candidacy.

COURSE WORK

Extent of course work is determined by Placement Examinations; however, candidate must complete a minimum of 42 credit hours.
COGNATES

Doctor of Musical Arts students may select an additional formal area of study through the cognate option. The Departments in which the cognate resides administers the cognate. Students must apply to the cognate Department for admission. The admission process may include an audition, interview, portfolio, or testing as determined by the cognate Department. Students must complete all requirements specified for a cognate to be recognized as having completed the cognate. Otherwise, the credits will be considered electives. No credits required in the DMA program can apply to the cognate. Any overlap will require approved course substitutions within either the DMA program or the cognate as determined to be most appropriate by the Dean of Graduate Studies.

Procedures for Entering a Cognate
1. Review the cognates offered on the Graduate Studies web site.
2. Select the cognate you would like to pursue.
3. Contact the Department in which the cognate resides and obtain written approval of your entrance. A simple e-mail by the faculty member in charge of the cognate to the Graduate Studies Office would suffice.
4. Visit the Graduate Studies Office to formally sign-up for the cognate and to obtain a copy of the Academic Program Record (APR) for the cognate.

ACCOMPANYING/CHAMBER MUSIC

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<th>Credits</th>
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<tr>
<td>Studio/Ensemble Accompanying (MKP691)</td>
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<tr>
<td>String/Keyboard Ensemble (MIP645)</td>
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</tr>
<tr>
<td>Accompanying/Chamber Music Seminar</td>
<td>2</td>
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<tr>
<td>Any one of the following courses:</td>
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<tr>
<td>String/Keyboard Ensemble (MIP645, 1 cr.)</td>
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<tr>
<td>Accompanying/Chamber Music Seminar (1 cr.)</td>
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<tr>
<td>Harpsichord, Organ, or Jazz Piano (1 cr.)</td>
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<tr>
<td>Any one of the following courses:</td>
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<tr>
<td>History of Chamber Music (MCY532, 3 cr.)</td>
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<tr>
<td>Art Song Literature (MVP525, 3 cr.)</td>
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<tr>
<td>Operatic Literature (MVP522, 3 cr.)</td>
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<tr>
<td>American Musical Theater (MCY583, 3 cr.)</td>
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CONDUCTING: Choral

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<tr>
<td>Choral Conducting Workshop (MVP67X)</td>
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<tr>
<td>Choral Score Study (MVP508)</td>
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<td>Choral Literature I (MCY535)</td>
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<td>Choral Literature II (MCY536)</td>
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<td>Choral Methods (MED632)</td>
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CONDUCTING: Instrumental

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<tr>
<td>Approved electives in conducting and/or ensembles</td>
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</tr>
<tr>
<td>Approved electives related to the art of conducting</td>
<td>5</td>
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**HIGHER EDUCATION**

Music Assessment (MED664) 3 credits
Any combination of the following three required course types:
- Special Projects: Higher Ed. in Music (MED693, 1-2 cr.)
- Pedagogy course(s) in music or music ed. (2-4 cr.)
- Doctoral Seminar(s) (MED680, 1-2 cr.)
Electives selected from the following courses 3 credits
- Organiz. & Admin. in Higher Ed. (EPS533, 3 cr.)
- Higher Ed. in the U. S. (EPS603, 3 cr.)
- International Music Ed. (MED620, 3 cr.)
- History & Philosophy of Music Ed (MED660, 3 cr.)
- Music Learning & Curriculum (MED662, 3 cr.)
- Music Research Methods (MED663, 3 cr.)

**INSTRUMENTAL PERFORMANCE**

Applied Performance Instruction 6 credits
Approved Performance Ensembles 6 credits

**JAZZ PERFORMANCE**

Applied Performance Instruction 6 credits
Select one course from below: 3 credits
- Jazz Pedagogy (MSJ544, 3 cr.)
- Analysis of Jazz Styles (MSJ620, 3cr.)
Electives in Jazz Theory / Improv. / Ensembles 3 credits

**KEYBOARD PEDAGOGY**

Keyboard Pedagogy (MKP547) 3 credits
Seminar in Keyboard Pedagogy (MKP647) 3 credits
Keyboard Pedagogy Workshop (MKP650) 1 credit
Keyboard Pedagogy Internship (MKP680) 2 credits (1x2)
One from the following: 3 credits
A. MKP 5XX Intermediate to Advanced Repertoire
B. MKP 5XX Keyboard Pedagogy II: Keyboard Pedagogy Diagnostics
C. MKP 650 Keyboard Pedagogy Workshop (2 credits) and MKP 680 Keyboard Pedagogy Internship (1 credit)

**MUSIC BUSINESS**

Entrepreneurship for Musicians (MMI530) 3 credits
Music Copyright Law (MMI674) 3 credits
Approved MMI Course Electives 6 credits

**MUSIC EDUCATION**

Psychology of Music (MED562) 3 credits
Seminar in Music Teacher Education (MED670) 1 credit
Approved electives in music education or other pedagogy 8 credits
MUSIC TECHNOLOGY (12 credits)

Select courses from those below: 12 credits
- Electronic Music Studio (MTC505, 2 cr.)
- MIDI and Control Processing (MTC506, 2 cr.)
- Digital Sound Synthesis and Processing (MTC507, 2 cr.)
- Multimedia for Musicians (MTC521, 3 cr.)
- Film Scoring I (MTC511, 3 cr.)
- Film Scoring II (MTC512, 3 cr.)
- Electronic and Computer Music Seminar (MTC667) 1-3 credits
- Intro To MIDI Seq. & Digital Workstations (MSJ522, 2 cr.)
- Audio Technology for Musicians (MMI520, 2 cr.)
- Digital Audio I (MMI502, 3 cr.)
- Technology in Music Education (MED570, 3 cr.)
- Computer Applications in Music Education (MED571, 2 cr.)

MUSIC THEORY (12 credits)

Enrollment in this cognate waives any other MTC requirements for the degree.

Select courses from those below: 12 credits
- The Aesthetics of Music (MTC501, 3 cr.)
- Sixteenth-Century Counterpoint (MTC513, 3 cr.)
- Advanced Counterpoint (MTC518, 3 cr.)
- Theory Pedagogy (MTC611, 3 cr.)
- Advanced Comprehensive Theory (MTC612, 3 cr.)
- Twentieth Century Idioms (MTC613, 3 cr.)
- Analytical Techniques (MTC617, 3 cr.)

MUSICOCOLGY (12 credits)

Bibliography (MCY528) 3 credits
Approved Musicology Courses 9 credits

VOCAL PEDAGOGY (12 credits)

Approved courses in pedagogy, vocal diction, or related courses.

VOCAL PERFORMANCE (12 credits)

Private Voice MVP VOM-P 4 credits
Vocal Pedagogy (MVP538) 2 credits
Vocal Pedagogy (MVP638) 2 credits
Language Diction for Singers (MVP65X) 4 credits

VOCAL ACCOMPANYING (12 credits)

Private Voice Lessons 2 credits
Language Diction for Singers (MVP65X) 2 credits
Vocal Accompanying (MKP687) 2 credits
Vocal Literature (Select one from below): 3 credits
- Art Song Literature (MCY525, 3 cr.)
- Operatic Literature (MCY522, 3 cr.)
Select courses from any below: 3 credits
- American Musical Theater (MCY583, 3 cr.)
- Graduate Courses in Vocal Performance
QUALIFYING EXAMINATION

To be taken upon completion of approximately 9 credit hours of work. Exams in the areas of

1. Musicology;

2. Music Theory-Composition; and

3. Music Education (If required by the program).

Performance and jazz performance majors must present a qualifying recital during the first semester in residence.

COMPREHENSIVE EXAMINATION

To be taken in major area (except performance) after completion of approximately 36 credit hours. Examination may be oral or written.

ADMISSION TO CANDIDACY

Doctoral students are admitted to candidacy after completing research tool requirements, qualifying and comprehensive examinations. No student may receive the degree in the same semester or summer session in which he or she is admitted to candidacy.

PERFORMANCE AND CREATIVE REQUIREMENTS

D.M.A. students in performance, jazz performance, or keyboard performance and pedagogy may present one recital before the qualifying written examination (provided they have passed their qualifying recital). Before the second or third, depending upon program, recital they must have passed the Qualifying Examinations and removed all reservations for the written examinations in music theory, musicology, and music education, as well as having presented a proposal for the doctoral essay to their committee. Before the final recital the student must be admitted to candidacy (this requirement includes the completion of both the qualifying examination and research tool subjects). All recitals are to be presented during either Fall or Spring semesters.

Performance Majors

Students accepted in the program must present three full-length solo recitals. In addition, instrumentalists are expected to perform a concerto with orchestra or a chamber music recital. Vocalists are expected to execute one or more substantial roles in a large scale work, e.g., opera or oratorio in addition to the solo recitals. Students majoring in accompanying and chamber music will present one solo recital, one chamber music recital, and three accompanying recitals. For Keyboard Performance and Pedagogy, an approved combination of recitals and pedagogy presentations is required.

Jazz Performance Majors

Students must present three full-length recitals

Conducting Majors (Choral)

No less than two approved full recitals shall be presented by each candidate.
Conducting Majors (Instrumental)
Three approved public recitals (or the equivalent) with suitable performing
groups must be given during the period of residency and prior to the oral
examination.

Composition Majors
1. The candidate will be required to compose a piece of major proportions for
large ensemble. In addition, no less than three works for any instrumental or
vocal group combination will be required during the period of residency.

2. A formal written analysis of the major work will be required. This will serve
as the Doctoral Essay for composition majors.

3. Some form of a recital or public performance of the candidate’s
compositions will be required. This requirement could be fulfilled with a recital
that would include representative works composed during the student’s
residence.

By means of a written doctoral essay or a lecture recital all D.M.A. candidates will be
expected to give evidence of their ability to make an original scholarly investigation and
present its results in an articulate manner.

Final Oral Examination (administered during Fall and Spring semesters only): defense of the
creative or recreative work, and the written essay or lecture recital.

LECTURE RECITAL

The lecture recital is a major presentation whose content must pertain to musical
performance, musical analysis, performance practice, comparative editions, interpretation,
musical style, or other issues that directly relate to a central theme of music performance.
A written document of the lecture recital must be submitted to the Graduate School
following procedures similar to those of the Doctoral Essay.

MASTER’S DEGREES

I. Programs. The Master of Music Degree is offered with majors in the areas shown
above.

II. Ensemble Requirements. The curricula for Master of Music degrees in performance
and conducting include participation in one ensemble during each semester that a
student is registered for seven credits or more.

III. General Admission Requirements. Those seeking admission in Performance should
have an undergraduate major or its equivalent in the performance field chosen. Those
applying for admission in Music Education should have an undergraduate background
substantially equivalent to certification requirements and teaching experience. Students
entering all graduate degree programs must take placement tests at the beginning of
the first Fall or Spring Semester in residence. Those seeking admission in Composition,
Studio Jazz Writing, or Media Writing and Production must submit with the application a
portfolio of compositions as evidence of creative ability.

IV. Credits. A minimum of thirty credits of graduate level courses with an average of B and
no grade below C. All students must complete the required courses of their major.
V. Oral Examinations. An oral examination in defense of the thesis, project, or recital is required. Final oral exams are administered during Fall and Spring semesters only.

Conducting Recital Guidelines

Master’s Recital (1 Credit)
A compilation on DVD of conducting single or multiple works of live performances of major ensembles spread across the Masters’ experience. These performances are arranged in consultation with the major professor who assists in the preparation of the performances.

Master’s Advanced Recital (2 Credits)
A full-length conducting recital is prepared and presented. The ensemble(s) and repertoire will be selected in close consultation with the major professor who will assist in the preparation process. All aspects of performance preparation including scheduling, venue arrangements, program notes, and the like will be carried out by the student under the guidance of the major professor.

Performance Recital Guidelines

Master’s Recital (1 Credit)
A full-length recital performed publicly by the student that may include chamber music in which the student’s instrument plays a prominent role. Selection of repertoire is determined in consultation with the major professor who assists in the preparation of the performances.

Master’s Advanced Recital (2 Credits)
A full-length recital in which all music performed features the recitalist as a soloist. The recitalist will prepare extended program notes on the repertoire performed. Portions of the extended program notes are to be included with the recital program distributed to the audience. The performance is to be recorded in both audio and video so that the recitalist presents a DVD as evidence of the recital to the Dean of Graduate Studies prior to the end of the semester in which the recital was given. Repertoire will be selected in consultation with the major professor, who will assist in the preparation process. The student under the guidance of the major professor will carry out all aspects of performance preparation including scheduling, venue arrangements, program notes, and the like.
Department of Instrumental Performance (MIP)

DEGREE PROGRAMS

DMA-INSTRUMENTAL CONDUCTING (MCDI)

Performance Courses (35% of total, 21 credits)
- 12 credits Applied Conducting
- 6 credits Ensembles (6 large ensemble)
- 3 credits MCY 520 History of Wind Band Literature (wind conductors) or approved elective (string conductors)

Creative Activities (20% of total, 12 credits)
- 1 credit MED602 DMA-Essay/Lecture Recital Proposal
- 5 credits DMA-Essay/Lecture Recital
- 6 credits DMA-Recitals
  (2 credits for each of 3 recitals)

Allied Music Courses (25% of total, 15 credits)
- 3 credits Musicology
- 3 credits MTC617 Analytical Techniques or other MTC course
- 3 credits Performance Seminars
- 5 credits Approved Electives
- 1 credit MED690 Teaching Music in College

Cognate/Electives (20% of total, 12 credits)

DMA-INSTRUMENTAL PERFORMANCE (MIP)

Performance Courses (40% of total, 24 credits)
- 12 credits Applied Lessons
- 12 credits Ensembles
  (6 large ensemble, 6 small ensemble)

Creative Activities (20% of total, 12 credits)
- 1 credit MED602 DMA-Essay/Lecture Recital Proposal
- 5 credits DMA-Essay/Lecture Recital
- 6 credits DMA-Recitals
  (2 credits for each of 3 recitals)

Allied Music Courses (20% of total, 12 credits)
- 3 credits Musicology
- 3 credits MTC617 Analytical Techniques or other MTC course
- 3 credits Performance Seminars
- 2 credits Electives
- 1 credit MED690 Teaching Music in College

Cognate/Electives (20% of total, 12 credits)
DMA-MULTIPLE WOODWINDS (MIPW)

Performance Courses (40% of total, 24 credits)
- 12 credits Applied Lessons in Flute, Oboe, Clarinet, Bassoon, and Saxophone
- 12 credits Ensembles (6 large ensemble, 6 small ensemble)

Creative Activities (20% of total, 12 credits)
- 1 credit MED602 DMA-Essay/Lecture Recital Proposal
- 5 credits DMA-Essay/Lecture Recital
- 6 credits DMA-Recitals (2 credits for each of 3 recitals)

Allied Music Courses (20% of total, 12 credits)
- 3 credits Musicology
- 3 credits MTC617 Analytical Techniques or other MTC course
- 3 credits Performance Seminars
- 2 credits Electives
- 1 credit MED690 Teaching Music in College

Cognate/Electives (20% of total, 12 credits)

MM–Instrumental Conducting (MCDI)
Candidates must possess and demonstrate an unquestioned gift of musical leadership based upon broad experience with instrumental ensembles. Advanced orchestration must be included in the program. Admission requirements include a baccalaureate degree in conducting or performance, accumulated practical experience with instrumental ensembles, and experience equivalent to an undergraduate requirement in orchestration. Enrollment in this major is only by special permission.

Major Area
- 8 credits MIPCDI-L Private Lessons
- 7 credits MIP6XX Instrumental Ensembles
- 1 credit Any one of the three options listed here to match the culminating project
  - MIP601 Program Notes Preparation
  - MIP602 Lecture Recital Preparation
  - MED601 Recital Paper Preparation
- 1 credit MIP712 Master’s Recital
- 2 credits Any one of the three options listed here as a culminating project
  - MIP711 Master’s Recital Paper
  - MIP714 Master’s Lecture Recital
  - MIP713 Master’s Advanced Recital

Other Studies in Music
- 3 credits MCY528 Music Bibliography
- 3 credits MTC617 Analytical Techniques

Electives
- 3 credits MXXXXX Musicology or Approved Elective
- 3 credits MXXXXX Music Education/Pedagogy or Approved Elective
- 3 credits MXXXXX Approved Electives
MM–Instrumental Performance (MIP)

Violin: The candidate must show an adequate technical grounding in scales, arpeggios, bowing and phrasing, demonstrate adequate ability in sight reading on the instrument, and be able to read at sight simple piano accompaniments.

Harp: The candidate must have a mastery of scales and arpeggios in all octaves in both slow and rapid tempo, and in various rhythms, should have had orchestral and other ensemble experience, should be able to read orchestral parts at sight, and should have developed the ability to transcribe music written for keyboard (or other) instruments for use in orchestra or ensemble or accompanying.

Multiple Woodwinds: The applicant must demonstrate, by audition, proficiency in at least three of the following families of instruments: clarinet, saxophone, flute, and double reed. Applied instruction will include a minimum of six credits from the above groups as determined by the supervisory committee. The curriculum further includes two credits in MIP 547 and one credit in MED 541. The recital (whose content and evaluation are the responsibility of the student’s committee) will consist of performance on the candidate's major instrument, and on instruments from at least two other woodwinds. The student is expected to supply his/her own professional quality instruments.

Other Orchestral Instruments: The candidate must demonstrate a well-grounded technique and an able control of his/her instrument, be able to perform as a soloist with orchestra in a concerto or concert piece for the instrument, and should have acquired a sufficiently thorough orchestral routine to play in a professional orchestra. The candidate should also be able to read at sight simple piano music, and must have completed sufficient experience in band, orchestra and chamber music playing.

Major Area

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<td>MIP6XX</td>
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Other Studies in Music

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Electives

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<tr>
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<td>Music Education /Pedagogy or Approved Elective</td>
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</tbody>
</table>
**MM–Multiple Woodwinds (MIPW)**

**Major Area**
- 8 credits MIPXXI-L Private Lesson
- 4 credits MIP6XX Instrumental Ensembles
- 1 credit Any one of the two options listed here to match the culminating project
  - MIP601 Program Notes Preparation
  - MED601 Recital Paper Preparation
- 1 credit MIP712 Master's Recital
- 2 credits Any one of the two options listed here as a culminating project
  - MIP711 Master's Recital Paper
  - MIP713 Master's Advanced Recital

**Other Studies in Music**
- 3 credits MCY528 Music Bibliography
- 3 credits MTC617 Analytical Techniques

**Electives**
- 3 credits MXXXXX Musicology or Approved Elective
- 3 credits MXXXXX Music Education /Pedagogy or Approved Elective

**ARTIST DIPLOMA IN PERFORMANCE**

The Artist Diploma in Performance is a program of advanced study designed for the outstanding performance career-oriented performer. The curriculum will focus on preparation for major competitions, auditions, apprenticeships, and the development of a performance career. Entrance to the program is limited to those individuals who have demonstrated exceptional performance skills by audition. A fully enrolled student can complete the eighteen-hour program in one year.

**Requirements**
- 8 credits Applied Lessons
- 2 credits Performance Ensembles
- 2 credits Recital
- 6 credits Approved Studies in Music
Department of Keyboard Performance (MKP)

DMA-COLLABORATIVE PIANO (MKPA)

Accompanying Courses - (30% of total, 18 credits)
- 6 credits Accompanying
- 4 credits Collaborative Piano Seminar
- 8 credits Applied Piano

Creative Activities (20% of total, 12 credits)
- 6 credits DMA-Accompanied/Chamber Recitals
  (2 credits for each of 3 recitals)
- 2 credits DMA-Recital
- 1 credit MED602 DMA-Essay/Lecture Recital Proposal
- 3 credits DMA-Essay/Lecture Recital

Allied Music Courses (30% of total, 18 credits)
- 3 credits Music Theory (MTC617, 611, 613, or 671)
- 3 credits Music Bibliography or (MCY532 or MCY525)
- 4 credits String-Keyboard Chamber Music
- 1 credit MED690 Music Teaching in College
- 7 credits Electives
  (Up to 4 credits of foreign language electives may be taken by those students who select the Vocal Accompanying cognate or foreign language as a tool subject.)

Cognate (20% of total, 12 credits)

DMA-KEYBOARD PERFORMANCE AND PEDAGOGY (KPED)

Keyboard Pedagogy Performance (40% of total, 12 credits)
- 24 credits Graduate Keyboard Performance and Pedagogy courses chosen in consultation with the Doctoral Advisor and approved by the student's committee during the first semester of course work.

Creative Activities (20% of total, 12 credits)
- 1 credit MED602 DMA-Essay Proposal
- 11 credits 700 level credits in recitals or essay

Other Studies in Music (20% of total, 12 credits)
- 12 credits Selected from the following 3-credit courses:
  MCY 527 Keyboard Literature
  MCY 528 Music Bibliography
  MED 562 Psychology of Music
  MED 662 Music Learning and Curriculum
  MED 663 Music Research Methods
  MED 664 Music Assessment
  MTC 617 Analytical Techniques

Cognate/Electives (20% of total, 12 credits)
DMA-PIANO PERFORMANCE (MKP)

Performance Courses (32% of total, 19 credits)
12 credits Applied Piano
4 credits Performance Seminars
3 credits Accompanying

Creative Activities (20% of total, 12 credits)
6 credits DMA-Recitals (2 credits for each of 3 recitals)
2 credits DMA-Concerto or Chamber Music Recital
1 credit MED602 DMA-Essay/Lecture Recital Proposal
3 credits DMA-Essay/Lecture Recital

Allied Music Courses (28% of total, 17 credits)
6 credits Music Theory
6 credits Performance Courses (20% of total, 12 credits)
1 credit String-Keyboard Chamber Music
3 credits Music Bibliography or Elective
1 credit MED690 Music Teaching in College

Cognate (20% of total, 12 credits)

MM-Collaborative Piano (MKPA)

The candidate must have had an undergraduate background in accompanying, either as an accompanying major or as a piano major with extensive experience as an accompanist. Candidates for this program should at the time of entrance manifest a pronounced ability in reading at sight. The ability to transpose and improvise is also desirable, as is a pronunciation knowledge of French, German, and Italian.

Major Area
6 credits MKPPII-L Private Lessons
2 credits MIP645 String-Keyboard Chamber Music
3 credits MKP688 Collaborative Piano Seminar
4 credits MKP691 Accompanying
2 credits MKP711 Recital Paper
1 credit MKP712 Recital

Other Studies in Music
3 credits MCY5XX Musicology
2 credits MKP547 Keyboard Pedagogy
1 credit MED601 Recital Paper Preparation
3 credits MTC617 Analytical Techniques

Electives
3 credits MXXXXX Electives
MM-Keyboard Performance and Pedagogy (KPED)

The candidate must complete prescribed courses in keyboard pedagogy and a lecture recital with a supporting paper.

**Major Area**
- 3 credits MKP 547  Keyboard Pedagogy
- 2 credits MKP 650  Keyboard Pedagogy Workshop
- 2 credits MKP 680  Keyboard Pedagogy Internship
- 1 credit MKP 713  Master’s Pedagogy Project (as lecture preparation)

Choose one of the following:
- 3 credits MKP 647  Seminar in Keyboard Pedagogy
- 3 credits MKP 5XX  Intermediate to Advanced Repertoire
- 3 credits MKP 593  Keyboard Pedagogy III: Practice Strategies
- 3 credits MKP 5XX  Keyboard Pedagogy II: Keyboard Pedagogy Diagnostics

**Other Studies in Music**
- 8 credits MKPPII-L  Private Lessons
- 1 credit MKP 712  Recital with Lecture Component
- 2 credits MKP 6XX  Accompanying
- 3 credits MTC 617  Analytical Techniques

**Music Electives** (16.7% of total, 5 credits)
- 3 credits MCY XXX  Musicology Elective
- 2 credits MXX XXX  Electives

---

MM-Piano Performance (MKP)

The candidate must have acquired the principles of tone production and velocity and their application to scales, arpeggios, chords, octaves, and double notes, and must have a balanced repertoire comprising the principal baroque, classic, romantic, and modern compositions which should include compositions by representative American and foreign composers. Candidates must have had experience in ensemble playing and should be capable sight-readers.

**Major Area**
- 8 credits MKPPII-L  Private Lessons
- 3 credits MKP6XX  Accompanying
- 2 credits MKP711  Recital Paper
- 1 credit MKP712  Recital

**Other Studies in Music**
- 3 credits MCY526  Keyboard Literature I
- 3 credits MCY527  Keyboard Literature II
- 2 credits MEDXXX  Music Education/Pedagogy Elective
- 1 credit MED601  Recital Paper Preparation
- 3 credits MTC617  Analytical Techniques

**Electives**
- 4 credits MXXXXX  Electives
ARTIST DIPLOMA IN PERFORMANCE

The Artist Diploma in Performance is a program of advanced study designed for the outstanding performance career-oriented performer. The curriculum will focus on preparation for major competitions, auditions, apprenticeships, and the development of a performance career. Entrance to the program is limited to those individuals who have demonstrated exceptional performance skills by audition. A fully enrolled student can complete the eighteen-hour program in one year.

Requirements

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<td>Approved Studies in Music</td>
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</table>

Keyboard Performance Course Listing
DEGREE PROGRAMS

DOCTOR OF PHILOSOPHY (PHD)

The Doctor of Philosophy program is offered in Music Education. Requirements for the degree will conform to those for the general Doctor of Philosophy degree, listed elsewhere in this Bulletin. The Ph.D. is a research degree requiring 60 credit hours beyond the Master's degree or 90 credit hours beyond a Bachelor's degree. Enrollment for the Ph.D. degree is limited. Acceptance into the program will be based on academic record, Graduate Record Examination Scores, personal suitability, recommendations, experience, and demonstrated teaching competency.

Students are admitted to candidacy after successful completion of course work, qualifying examinations in musicology, music theory, and music education, and research tool requirements. Research tools are selected in consultation with the student's advisor, and are related to the student's proposed dissertation research. Comprehensive examinations are given after all academic work is completed to meet the candidacy requirement. The student's dissertation research topic must be presented to and approved by the student's committee. No student gains the right to be recommended for the degree simply by completing course requirements. Final oral examinations are administered during Fall & Spring Semesters only.

Requirements

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<tr>
<th>Major Area</th>
<th>Credits</th>
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<td>MED660  History &amp; Philosophy of Music Education</td>
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<td>MED663  Music Research Methods</td>
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<td></td>
<td>1</td>
<td>MED670  Seminar in Music Teacher Education</td>
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<td></td>
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<td>MED680  Doctoral Seminar in Music Education</td>
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<td>MED695  Doctoral Research Project</td>
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<td>MED730  Dissertation in Music Education</td>
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<td>MTCXXX  Music Theory</td>
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<td>MXXXXX  Performance Ensembles/Applied Music</td>
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<th>Electives</th>
<th>Credits</th>
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<td>MEDXXX  Music Education Electives</td>
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<td>EPSXXX  Research Tools &amp; Professional Education</td>
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<td></td>
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<td>MXXXXX  Approved Electives</td>
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</tbody>
</table>
MM-Music Education (MED)

**Major Area**
- 3 credits MED662 Music Learning & Curriculum
- 3 credits MED663 Research Methods in Music
- 3 credits MED664 Music Assessment
- 2 credits MED665 Seminar in Music Education
- 3 credits MED7XX Thesis/Recital/Project

**Other Studies in Music**
- 6 credits MXXXXX Musicology and Music Theory Courses

**Electives**
- 10 credits MXXXXX Approved Curricular Track Selected From Below

**Thesis Track**
- 3 credits MXXXXX Musicology, Music Theory, Lesson/Ensemble Electives
- 7 credits MXXXXX Approved Electives

**Recital Track**
- 2 credits MXXXXX Ensembles
- 7 credits MXXXXX Private Lessons
- 4 credits MXXXXX Approved Electives

**Project Track**
- 3 credits MXXXXX Musicology, Music Theory, Lesson/Ensemble Electives
- 7 credits MXXXXX Approved Electives

**String Pedagogy Track**
- 2 credits MXXXXX Ensembles
- 4 credits MXXXXX Private Lessons
- 3 credits MIP549 String Repertoire & Pedagogy
- 2 credits MED647 Seminar in Instrumental Music Education
- 2 credits MXXXXX Approved Electives

MM-Music Education with Teaching Certification

A student holding a B.M. degree in music may work toward certification in Music Education concurrently with the M.M. degree in Music Education. The B.M. degree must have included at least 14 hours of music performance, 12 of music theory, 3 of conducting, 6 of music history, and credit in performance ensembles. This is a Florida Department of Education-approved program leading to initial certification as a music teacher, K-12.

**Major Area**
- 3 credits MED662 Music Learning & Curriculum
- 3 credits MED664 Music Assessment
- 0-4 credits MED64X Performance Techniques Classes if needed
- 2 credits MED665 Seminar in Music Education
- 6 credits MED77X Associate Teaching
- 1 credit MED433 Senior Seminar in Music Education
- 3 credits TAL506 Issues & Strategies in ESOL
- 3 credits TAL603 Teacher in American Society
- 3 credits TAL632 Classroom and Behavior Management
Other Studies in Music

3 credits MXXXXX Applied Music/Ensemble
3 credits MTC617 Analytical Techniques
6 credits MCYXXX Musicology

Music Education Electives
(Must include 3 credits of Elementary Methods & 3 credits of Secondary Methods)

Elementary Methods Courses (3 credits required)

3 credits MED542 Teaching Elementary General Music
3 credits MED555 Elementary Music Workshop
2 credits MED673 Music in Early Childhood

Secondary Methods Courses (3 credits required)

2 credits MED430 Teaching Jazz/Popular Music in Secondary Schools
2 credits MED544 Teaching Secondary General Music
3 credits MED549 Teaching Secondary Choral Music
3 credits MED556 Secondary General Music Workshop
3 credits MED543 Teaching Elementary & Secondary Instrumental Music

Other Music Education Electives

2 credits MED647 Seminar in Instrumental Music Education
2 credits MED674 Seminar in General Music
3 credits MED548 Music for Special Learners
3 credits MED570 Technology in Music Education
2 credits MED571 Computer Applications in Music Education I
2 credits MED572 Computer Applications in Music Education II

MM-Music Therapy (MTY)

Major Area

3 credits MED663 Music Research Methods
0 credits MED610 Music Therapy Forum
3 credits MED629 Advanced Music Therapy Practice I
3 credits MED630 Advanced Music Therapy Practice II
2 credits MED659 Graduate Practicum
3 credits MED710 Master's Thesis

Other Studies in Music

10 credits MXXXXX Approved Graduate Level Courses in Music

Electives

One course in research design and statistics from:

3 credits EPS553 Introductory Statistics
3 credits PSY630 Advanced Psychological Methods
3 credits PSY631 Advanced Psychological Statistics I

One course in an area of clinical or research interest from:

3 credits EPS506 Foundations of Mental Health Counseling
3 credits EPS612 Counseling Theories and Practice
3 credits MED600 Psychoacoustical Foundations of Music
3 credits PSY605 Psychobiology
3 credits PSY620 Developmental Psychology
MM-Music Therapy with Undergraduate Equivalency

**Major Area**

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**Other Studies in Music**

10 credits MXXXXX Approved Graduate Level Courses in Music

**Electives**

3 credits One course in research design and statistics from:

- EPS553 Introductory Statistics (3 credits)
- PSY630 Advanced Psychological Methods (3 credits)
- PSY631 Advanced Psychological Statistics I (3 credits)

3 credits One course in an area of clinical or research interest from:

- EPS506 Foundations of Mental Health Counseling (3 credits)
- EPS612 Counseling Theories and Practice (3 credits)
- MED600 Psychoacoustical Foundations of Music (3 credits)
- PSY605 Cognitive Neuroscience (3 credits)
- PSY620 Developmental Psychology (3 credits)

**Undergraduate Equivalency Courses**

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<td>Voice Techniques</td>
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<td>MED359</td>
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<td>Child &amp; Adolescent Development (3 credits)</td>
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<td>Or</td>
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<td>BIL109</td>
<td>Human Biology</td>
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</table>

[Music Education and Music Therapy Course Listing](#)
Department of Music Media and Industry (MMI)

DEGREE PROGRAMS

MM-Arts Presenting (MPR)

**Major Area**
- 3 credits MMI622 Entertainment and Event Production Industry
- 3 credits MMI626 Performing Arts Centers Management
- 3 credits MMI630 Marketing and Promoting Arts Presenting Programs and Organizations
- 3 credits MMI634 Event Sponsorship and Community Outreach Programs
- 3 credits MMI636 Financial and Risk Aspects of the Arts Presenting Industry
- 2 credits MMI640 Arts Presenting Project
- 2 credits MMI642 Grant Proposal Writing
- 3 credits MMI682 Industry Internship

**Electives in Business**
- 6 credits Industry Related Business Courses

MM-Music Business and Entertainment Industries (MBEI)

**Major Area**
- 3 credits MMI537 Recorded Music Operations
- 2 credits MMI573 International Music Publishing
- 3 credits MMI650 Analysis of Music Industry Agreements
- 3 credits MMI652 International Music Licensing
- 3 credits MMI656 Entertainment Industry Practices
- 3 credits MMI674 Music Copyright Law
- 1 credit MMI678 Publishing and Record Industry Royalties
- 3 credits MMI702 Internship in Music Industry
- 9 credits Nine credits of approved Graduate Course electives

Cumulative Exit Exam

MM-Music Engineering Technology (MUE)

**Major Area**
- 3 credits MMI601 Advanced Digital Audio Electronics
- 3 credits MMI606 Windows Audio Plug-In Programming
- 3 credits MED562 Psychology of Music I
- 2 credits MED600 Psychoacoustical Foundations of Music
- 3 credits MTC667 Advanced Projects in Electronic Music
- 4 credits MMI6XX Audio Workshop (MMI653, 670, 671, 672)
- 3 credits MMI713 Research Project

**Electives**
- 12 credits Select one of the following emphases

  **Hardware Emphasis:**
  - EEN536 Digital Signal Processing (3 credits)
  - EEN538 Introduction to Digital Image Processing (3 credits)
  - EEN542 Digital Integrated Circuits (3 credits)
  - EEN636 Advanced Digital Filter Design (3 credits)
Software Emphasis:
CSC529  Introduction to Computer Graphics (3 credits)
CSC555  Multimedia Systems (3 credits)
CSC609  Cryptography and Data Security (3 credits)
CSC655  Advanced Multimedia Systems (3 credits)

Music Media and Industry Course Listing
Department of Music Theory-Composition (MTC)

DEGREE PROGRAMS

DMA-COMPOSITION (MTC)

Composition Courses (20% of total, 12 credits)
- 8 credits MTC615, MTC616 Composition Seminar
- 4 credits MTC682 Composition Workshop

Creative Activities (20% of total, 12 credits)
- 12 credits MTC731 DMA-Essay Research

Theory/Composition Courses (25% of total, 15 credits)
- 3 credits MTC611 Theory Pedagogy
- 12 credits Music Theory courses

Musicology Courses (15% of total, 9 credits)
- 9 credits Musicology courses

Cognate/Electives (20% of total, 12 credits)

MM-Music Composition (MTC)

Major Area
- 2 credits MTC615 Composition Seminar I
- 2 credits MTC616 Composition Seminar II
- 6 credits MTC710 Thesis Composition
- 6 credits Two courses selected from the following
  - MTC611 Theory Pedagogy (3 credits)
  - MTC613 Twentieth Century Idioms (3 credits)
  - MTC617 Analytical Techniques (3 credits)

Other Studies in Music
- 3 credits MCY524 Contemporary Music
- 3 credits MCYXXX Music History Electives
- 2 credits MXXXXX Private Lessons
- 2 credits MXXXXX Approved Ensembles

Electives
- 3 credits MTCXXX Approved Elective in MTC
- 3 credits MXXXXX Graduate Level Electives

MM-Digital Arts and Sound Design (MTCD)

Major Area
- 2 credits MTC 605 Digital Art and Sound Design
- 6 credits In Digital Arts courses (MTC 505 Analysis and History of Electroacoustic Music, MTC 506 Sequencing and Digital Editing, MTC 593 Special Topics, MTC506 MIDI and Control Processing, MTC 507 Digital Sound Synthesis and Processing, MTC 521 Multimedia for Musicians, or other approved courses in MTC and MUE)
2 credits  MTC 507 Licensing
6 credits  MTC 667 Advanced Electronic and Computer Music Seminar
6 credits  MTC 710 Thesis Project

Other Studies in Music
4 credits  Ensemble appropriate for Music Technology (based on approval of Department Chair)
2 credits  MED 600 Psychoacoustic Foundations of Music (2)

Electives
3 credits  MTCXXX Approved Elective in MTC
3 credits  MXXXXX Graduate Level Electives at the 600 level

MM-Media Writing and Production (MWP)

Major Area
3 credits  MMI520 Audio Technology for Musicians
2 credits  MTC511 Film Scoring I
2 credits  MTC512 Film Scoring II
1 credit  MTC553 Film Scoring III (new course)
3 credits  MTC646 Studio Production Seminar
3 credits  MTC696 Studio Production Ensemble
3 credits  MTC713 Masters Media Writing Project

Other Studies in Music
3 credits  MMI530 Entrepreneurship for Musicians
3 credits  MSJ614 Advanced Orchestration
1 credit  MSJ615 Jazz Composition Seminar I

Electives
6 credits  MXXXXX Electives (3 credits must be 600 level or above)

Music Theory and Composition Course Listing
Department of Musicology (MCY)

DEGREE PROGRAMS

MM-Musicology (MCY)

**Major Area**
- 3 credits  MCY528  Music Bibliography
- 12 credits MCYXXX  Musicology Courses
- 6 credits  MCY710  Thesis

**Other Studies in Music**
- 3 credits  MEDXXX  Music Education Elective
- 3 credits  MTC617  Analytical Techniques

**Electives**
- 3 credits  MCYXXX  Electives

Musicology students are expected to demonstrate proficiency in a language other than English, normally German, French, or Spanish. Proficiency examinations will be administered by the Musicology Department and will consist of 1-2 passages from representative scholarly readings. Alternatively, enrolling in GER 625, FRE 625, or an equivalent course at the graduate level may fulfill the requirement. This requirement should be completed by the beginning of the second year to facilitate research on the master's thesis.

[Musicology Course Listing](#)
Department of Studio Music and Jazz (MSJ)

DEGREE PROGRAMS

DMA-JAZZ COMPOSITION (MSJC)

Performance Courses (20% of total, 12 credits)
- 10 credits Jazz Composition
- 2 credits Ensembles

Creative Activities (20% of total, 12 credits)
- 1 credit MED602 DMA-Essay/Lecture Recital Proposal
- 11 credits DMA-Essay/Lecture Recital

Jazz Courses (20% of total, 12 credits)
- 3 credits MSJ620 Analysis of Jazz Styles
- 3 credits MSJ544 Jazz Pedagogy and Administration/Special Project
- 3 credits Jazz Performance Ensembles
- 1 credit MED690 Teaching Music in College
- 2 credits Electives in Jazz

Allied Music Courses (20% of total, 12 credits)
- 3 credits MCY528 Music Bibliography
- 3 credits MTC617 Analytical Techniques or other MTC course
- 3 credits MED562 Psychology of Music
- 3 credits Musicology/Music Theory Electives

Cognate/Electives (20% of total, 12 credits)

DMA-JAZZ PERFORMANCE (MSJI or MSJV)

Performance Courses (20% of total, 12 credits)
- 10 credits Applied Lessons
- 2 credits Ensembles

Creative Activities (20% of total, 12 credits)
- 1 credit MED602 DMA-Essay/Lecture Recital Proposal
- 11 credits DMA-Essay/Lecture Recital

Jazz Courses (20% of total, 12 credits)
- 3 credits MSJ620 Analysis of Jazz Styles
- 3 credits MSJ544 Jazz Pedagogy and Administration/Special Project
- 3 credits Jazz Performance Ensembles
- 1 credit MED690 Teaching Music in College
- 2 credits Electives in Jazz
Allied Music Courses (20% of total, 12 credits)
3 credits MCY528 Music Bibliography
3 credits MTC617 Analytical Techniques or other MTC course
3 credits MED520 Psychology of Music
3 credits Musicology/Music Theory Electives

Cognate/Electives (20% of total, 12 credits)

**MM-Jazz Performance, Instrumental (MSJI)**

**Major Area**

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<td>Jazz Improvisation</td>
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**Other Studies in Music**

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<tr>
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**MM-Jazz Performance, Vocal (MSJV)**

**Major Area**

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<td>Jazz Ensembles</td>
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**Other Studies in Music**

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<tr>
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<td>MSJ544</td>
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**Electives**

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**MM-Jazz Pedagogy (JPED)**

**Major Area**

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<td>MSJ56X</td>
<td>Jazz Improvisation</td>
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<td>2</td>
<td>MED640</td>
<td>Seminar in Music Education</td>
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2 credits  MSJ509  Jazz Composition I
3 credits  MSJ520  Advanced Modern Arranging II
3 credits  MSJ620  Analysis of Jazz Styles

Electives
6 credits  MXXXXX  Approved Electives

MM-Studio Jazz Writing (SJW)

Major Area
2 credits  MSJ615  Jazz Composition Seminar I
3 credits  MSJ521  Advanced Modern Arranging III
3 credits  MSJ614  Advanced Orchestration
2 credit  MSJ522  Digital Sequencing and Notation
4 credits  MSJ675  Jazz Writing Ensemble
3 credits  MSJ713  Master’s Jazz Writing Project

Other Studies in Music
2 credits  MMI520  Audio Production
3 credits  MMI530  Entrepreneurship for Musicians
2 credits  MTC511  Film Scoring I
2 credits  MTC512  Film Scoring II
2 credits  MTC615  Composition Seminar

Electives
2 credits  MXX5XX  Other Elective
Department of Vocal Performance (MVP)

DMA-CHORAL CONDUCTING (MCDC)

Conducting Courses (40% of total, 24 credits)
- 2 credits Choral Conducting Workshop
- 4 credits Private Conducting MVPCDM-P (@ 1 credit)
- 4 credits Ensembles MVP600 level (@ 1 credit)
- 2 credits MVP508 Choral Score Study
- 2 credits MED632 Choral Methods
- 3 credits MTC515 Choral Arranging
- 2 credits MCY535 Choral Literature I
- 2 credits MCY536 Choral Literature II
- 2 credits Electives
- 1 credit MED690 Teaching Music in College

Creative Activities (20% of total, 12 credits)
- 1 credit MED602 DMA-Essay Proposal
- 8 credits DMA-Essay
- 3 credits DMA-Recitals

Allied Music Courses (20% of total, 12 credits)
- 3 credits MTC617 Analytical Techniques or other MTC course
- 3 credits Graduate Music Seminars
- 2 credits MVP538 Vocal Pedagogy
- 4 credits Applied Voice or Piano Lessons (@ 1 credit each)

Cognate/Electives (20% of total, 12 credits)

DMA-VOCAL PEDAGOGY AND PERFORMANCE (VPED)

Performance Courses (20% of total, 12 credits)
- 8 credits Applied Lessons in voice performance
- 2 credits MVP688 Ensembles
- 2 credits MVP552 Coaching—vocal performance

Creative Activities (20% of total, 12 credits)
- 1 credit MVP732 DMA-Recital
- 1 credit MED602 Doctoral Essay Proposal
- 10 credits MVP731 Doctoral Essay Research
Vocal Pedagogy (30% of total, 18 credits selected from the following)

Vocal Literature for Teaching:
- 3 credits MVP610 English
- 3 credits MVP611 Italian
- 3 credits MVP612 German
- 3 credits MVP613 French
- 3 credits MVP614 Musical Theatre
- 1 credit MVP630 Studio Teaching Techniques
- 3 credits MVP638 Advanced Vocal Pedagogy
- 1 credit MVP639 Vocal Pedagogy Internship
- 1 credit MED680 Doctoral Seminar
- 1 credit MED690 Teaching Music in College
- 2 credits MVP636 Voice Disorders

Allied Music Courses (10% of total, 6 credits)
- 3 credits MED562 Psychology of Music
- 3 credits MTC617 Analytical Techniques

Cognate/Electives (20% of total, 12 credits)

DMA-VOCAL PERFORMANCE (MVP)

Performance Courses (35% of total, 21 credits)
- 12 credits Applied Voice
- 6 credits Vocal Performance Preparation
- 3 credits Opera Theatre

Creative Activities (20% of total, 12 credits)
- 1 credit MED602 DMA-Essay Proposal
- 5 credits DMA-Essay
- 6 credits DMA-Recitals (2 credits for each of 3 recitals)

Allied Music Courses (25% of total, 15 credits)
- 6 credits Musicology (6 credits Art Song Literature and Opera Literature or other MCY courses)
- 3 credits MTC617 Analytical Techniques or other MTC course
- 3 credits Performance Seminars
- 2 credits Advanced Vocal Pedagogy
- 1 credit MED690 Teaching Music in College

Cognate/Electives (20% of total, 12 credits)

MM–Choral Conducting (MCDC)

Candidates must possess and demonstrate an unquestioned gift of musical leadership based upon broad experience with choral ensembles. MVP538 (Vocal Pedagogy) and 2-3 credits of private vocal or piano instruction must be included in the program. Admission requirements include a baccalaureate degree in music, practical experience in choral conducting through church, school, or community ensembles. Enrollment in this major is only by special permission. For detailed information, please consult the Graduate Choral Conducting Student Handbook, available from the Choral Office.
Major Area

2 credits MVPCDX Private Conducting Lessons
2 credits MVP508 Score Study
2 credits MVP538 Vocal Pedagogy
3 credits MVP6XX Performance Ensembles
2 credits MVP671, 2, 3 Choral Conducting Workshop
1 credit MVP712 Master’s Recital
2 credits MVP711 Master’s Recital Paper

Other Studies in Music

3 credits MTC617 Analytical Techniques
2 credits MCY535 Choral Literature I
2 credits MCY536 Choral Literature II
1 credit MED601 Recital Paper Preparation
2 credits MED632 Vocal Methods Materials

Electives

4 credits Approved electives in Voice Lessons, Piano Lessons or Diction
3 credits MXXXXX Approved Electives

MM-Vocal Performance (MVP)

The candidate must demonstrate the ability to sing in English, French, German, and Italian; be knowledgeable of the more difficult arias of opera and oratorio and of recitative in both the free and measured forms; have a thorough acquaintance with the general song literature; and be able to present a creditable recital. Each student who enters the Master of Music Degree Program in Voice must show undergraduate credit equivalent, or enroll for the following courses before graduation: MCY522 Operatic Literature; MCY525 Art Song Literature; MVP538 Vocal Pedagogy; MVP638 Advanced Vocal Pedagogy; two semesters of college-level Italian; two semesters of college-level French, two semesters of college-level German (or demonstrate by departmental examination, acceptable proficiency in these languages).

Major Area

4 credits MVPVOI-L Private Lessons
4 credits MVP552 Vocal Performance Preparation
4 credits MVP6XX Performance Ensembles
2 credits MVP638 Advanced Vocal Pedagogy
1 credit MIP712 Master’s Recital
2 credits MIP711 Master’s Recital Paper

Other Studies in Music

3 credits MTC617 Analytical Techniques
3 credits MCYXXX Approved Musicology Course
1 credit MED601 Recital Paper Preparation

Electives

6 credits MXXXXX Approved Electives
ARTIST DIPLOMA IN PERFORMANCE
The Artist Diploma in Performance is a program of advanced study designed for the outstanding performance career-oriented performer. The curriculum will focus on preparation for major competitions, auditions, apprenticeships, and the development of a performance career. Entrance to the program is limited to those individuals who have demonstrated exceptional performance skills by audition. A fully enrolled student can complete the eighteen-hour program in one year.

Requirements
8 credits Applied Lessons
2 credits Performance Ensembles
2 credits Recital
6 credits Approved Studies in Music

Vocal Performance Course Listing
The School of Nursing and Health Studies offers three graduate degrees: the Master of Science in Nursing (MSN), the Doctor of Nursing Practice (DNP), and the Doctor of Philosophy (PhD) in Nursing.

If admitted to an MSN, DNP or PhD program, all students must successfully pass a background check which includes fingerprinting and drug screening, and must also provide proof of current immunizations. These requirements must be met prior to registering for courses.

Note that courses and policies are subject to change throughout the academic year. Please refer to the 2012-2013 Student Handbook for the applicable curriculum and progression policies.

MASTER OF SCIENCE IN NURSING

The Master of Science in Nursing (MSN) degree program is designed for professional nurses holding a Bachelor of Science degree with a major in nursing (BSN). Registered nurses with baccalaureate degrees in other fields are also eligible to apply for admission. Specialty tracks focus on selected areas of advanced practice nursing and nursing education consisting of 30 to 100 semester credits. The degree requirements may be completed in three to seven semesters of full-time study depending on the specialty. Part-time study is also available for the Acute Care/Adult Nurse Practitioner, Family Nurse Practitioner and Nurse Education tracks. MSN tracks are lock-step and students must successfully complete a semester to progress to the next semester. Further information about each program may be obtained from the Office of Student Services, School of Nursing and Health Studies, University of Miami, P.O. Box 248153, Coral Gables, FL 33124-3850; by visiting us on-line at: http://www.miami.edu/sonhs/index.php/sonhs/academics/master_programs/, e-mail Nursinggrad@miami.edu or calling (305) 284-4325.

The MSN Program is accredited by the Commission on Collegiate Nursing Education (CCNE), One DuPont Circle NW, Suite 530, Washington, DC 20036, (202) 887-6791. Additional national accreditations are from the Accreditation Commission for Midwifery Education (ACME) formerly known as American College of Nurse Midwives Division of Accreditation, 8430 Colesville Road, Suite 1550, Silver Spring, MD 20910, (204) 485-1845, and the Council on Accreditation of Nurse Anesthesia Education Programs (COA), 222 South Prospect Avenue, Park Ridge, Illinois, 60068-4001, (847) 692-7050 (ext. 1154).

GRADUATE STUDENT RESPONSIBILITIES

Students in the School of Nursing and Health Studies are responsible for meeting the degree requirements. It is the student's responsibility to comply with all the provisions of the Bulletin and written changes to the program of study. Students are provided assistance by advisors and faculty members. Requests for deviation from the program of study or school requirements are granted only by written approval from the Dean. Students who are in violation of the provisions of this Bulletin may be withdrawn unilaterally by appropriate School officials from classes, deleted as Nursing and Health Studies students or have a stop placed upon their future enrollment. The school reserves the right to change academic requirements to include course offerings to ensure that students are receiving the latest knowledge. Classes
may be held on weekdays or weekends, and will be listed as such in the course schedule. Changes are transmitted by written notice in the current year of the School of Nursing and Health Studies Master’s Handbook located at www.miami.edu/sonhs or by the Dean.

PROGRESSION POLICY

In order for MSN students to progress through their programs to completion, the academic policy is as follows:

1. Any graduate student who receives a “C” or lower in a nursing course will be dismissed from his or her program.

2. A grade of “B-” or “C+” for a course is below graduate standards, and the student must repeat that course. However, a student may only repeat one course, one time.

3. A passing grade in all clinical experiences is required to pass a course having a clinical component (generally listed as a “lab section” by UM). Students who are not making satisfactory progress may also receive an academic alert at mid-semester or mid-course.

4. All grades are included in the computation of the UM overall grade point average including those that are failed or repeated.

MSN ADMISSION REQUIREMENTS (Advance Practice Specialties)

Admission to graduate programs in the School of Nursing and Health Studies is subject to the rules, regulations, and procedures as determined by each graduate nursing program and the Graduate Bulletin of the University of Miami. Admission to the master’s program requires:

- Submission of a complete University of Miami Graduate School application for admission
- A Baccalaureate degree (BSN preferred) from a regionally-accredited institution
- Official transcripts from all undergraduate and graduate institutions attended, unless the applicant is a graduate of the University of Miami
- Three letters of reference, at least one of which is from an academic source
- Statement of professional goals for graduate study
- Current resume (Nurse Anesthesia applicants must have a minimum of one year critical care experience)
- Acceptable Graduate Record Examination (GRE) scores for the Nurse Anesthesia program. Our GRE School Code is 5815. The GRE is not required for admission to the Acute Care/Adult Nurse Practitioner, Family Nurse Practitioner, Nurse Education, and Nurse Midwifery tracks
- Prerequisite: Introductory Statistics Course
- Current (unrestricted) RN license (once admitted to the program, students must provide a Florida RN license)
● Photocopies of the following certifications:

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● Applicants for whom English is not the native language must comply with the Minimum Score Requirement in the University’s policy on Examinations for International Students located at:

http://www.miami.edu/admission/index.php/undergraduate_admission/apply/international_applicants/toefl_or_other_english_proficiency_requirements/

● Interviews will be scheduled as requested by faculty

**MSN SPECIALTY TRACKS: ACUTE CARE/ADULT NURSE PRACTITIONER, FAMILY NURSE PRACTITIONER, NURSE ANESTHESIA, NURSE EDUCATION AND NURSE MIDWIFERY**

Programs leading to the Master of Science in Nursing (MSN) degree prepare students for Advanced Practice Nursing in Acute Care/Adult Nurse Practitioner, Family Nurse Practitioner, Nurse Anesthesia, Nurse Education and Nurse Midwifery.
### MSN DEGREE REQUIREMENTS

#### Acute Care/Adult Nurse Practitioner Plans of Study – 48 credits

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**Lab Hours not included in clinical hours**
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### Summer II

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### Fall III

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**Total for Semester**

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**Total Program**

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**Lab Hours not included in clinical hours**

### Family Nurse Practitioner Plans of Study – 37 Credits

#### Fall I

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<tr>
<td>NUR 628 Adult I</td>
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**Semester Total**

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#### Spring I

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**Semester Total**

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**Lab Hours not included in clinical hours**

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<td>Class Credits</td>
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*Lab Hours not included in clinical hours
### Nurse Anesthesia – Plan of Study 100 credits (Full-time only)

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*Lab Hours not included in clinical hours
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| **Total for Program** | | **40** | **27** | **13** | **672** |

*Lab hours not included in clinical hours.
DOCTOR OF NURSING PRACTICE

The Doctor in Nursing Practice (DNP) requires 38 credits of coursework beyond the master’s degree. The DNP degree is a practice-focused doctorate designed for nurses seeking a terminal degree in nursing practice. Classes are held one weekend per month—all day on Friday, Saturday and Sunday. The DNP Program is accredited by the Commission on Collegiate Nursing Education (CCNE), One DuPont Circle NW, Suite 530, Washington, DC 20036, (202) 887-6791.

The outcome objectives for graduates of the DNP program are to:

- Integrate knowledge, theories, and concepts from the biophysical, psychosocial, analytical, and organization sciences to develop ethical health care systems and new frontiers for nursing practice that addresses health care disparities

- Evaluate research methods and findings to create an evidence-base for nursing practice and health care delivery systems that reflect best practices and alleviate health care disparities

- Synthesize knowledge gained from traditional and innovative learning methods to lead quality, cost-effective health care collaborations addressing health care disparities.

- Demonstrate expert clinical judgment and knowledge of health care systems to design, deliver and evaluate evidence-based care interventions to reduce health care disparities

- Model expert nursing practice and serve as mentors to nursing colleagues in their efforts to improve nursing practice and health care systems

- Employ knowledge of health care policy and economics to develop and evaluate programs to address health care disparities

DNP ADMISSION REQUIREMENTS

- A baccalaureate degree and a master’s degree, preferably in nursing, from an accredited institution. Individuals without an MSN are evaluated on a case-by-case basis for admission

- Official transcripts from all undergraduate and graduate institutions attended, unless the applicant is a graduate of the University of Miami

- Three (3) letters of recommendation, at least one of which is from an academic source, and preferably from individuals with an earned doctorate in nursing

- Statement of professional goals for graduate study

- Current resume

- National specialty certification in an area of nursing practice

- Current (unrestricted) RN license*
● Current Basic Life Support certification (i.e., CPR or BLS)

● Applicants for whom English is not their native language must comply with the minimum Score Requirement in the University’s policy on Examinations for International Students located at http://www.miami.edu/admission/index.php/undergraduate_admission/apply/international_applicants/toefl_or_other_english_proficiency_requirements/

● Interviews will be scheduled as requested by faculty

● Documentation of completion of a minimum of 440 precepted clinical hours or supervised residency hours in master’s level program. An applicant who cannot provide such documentation may submit a portfolio for evaluation of equivalent clinical hours. Contents of the portfolio should include:

- Descriptions of any supervised internship or residency experiences in their master’s program
- Descriptions of any supervised internship or residency experiences they may have had after their master’s programs
- Descriptions of nursing practice-related supervised projects in their master’s programs
- Descriptions of nursing practice-related supervised projects they accomplished after their master’s programs (community or service sector). Any of the projects must have been accomplished outside of work hours
- Signed statement from supervisor of project with the number of hours in the project.
- Names and contact information of the supervisors who can be contacted to describe the experiences listed above

Final assignment of portfolio clinical hours is non-negotiable and is based on the level and nature of the supervision, the type and applicant’s responsibilities in the project.

* International and out-of-state students are welcomed into our DNP program. However, some assignments are limited to students holding current Florida RN licenses and BLS certification.

**DNP DEGREE REQUIREMENTS**

To receive the Doctor of Nursing Practice degree, the candidate must:
1. Complete all coursework as required with an overall GPA of 3.0 or better
2. Complete all required clinical hours
3. Successfully complete the capstone project
4. Successfully pass a comprehensive examination. The exam is an integrative experience to demonstrate students’ mastery of the outcome objectives of the program
### Doctor of Nursing Practice - Plan of Study 38 credits (Full-time only)

<table>
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<th>Course Title</th>
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* One of EPS 539, NUR 660, or other approved elective
DOCTOR OF PHILOSOPHY

The Ph.D. with a major in Nursing Science requires a minimum of 41 credits of coursework beyond the master’s degree or 62 credits of coursework beyond the bachelor’s degree. The principal goal of the Ph.D. with a major in Nursing Science is to prepare scholars and researchers who will contribute to the growth of science in nursing through recognized methods of scholarly inquiry. Admission to the doctoral program is competitive.

PH.D. ADMISSION REQUIREMENTS

A. Admission. The regular admission procedures include:
   1. The completed application form
   2. The official transcripts of all college work previously taken, including both undergraduate and graduate.
   3. Applicants must submit the scores from the Graduate Record Examination, taken within 5-years of the application
   4. Applicants for whom English is not the native language must comply with the minimum score requirements in the University’s policy on Examinations for International Students.
   5. Statement of Goals
   6. Letters of Recommendation

B. Selection of students. Factors considered for admission include:
   1. References including written evaluations from key professors
   2. Statement of professional goals and interests in doctoral study
   3. Admissions interview
   4. Portfolio of scholarly work including published manuscripts/scholarly papers

DEGREE REQUIREMENTS

To receive the Doctor of Philosophy degree, the candidate must meet all the general requirements for the Ph.D. degree with respect to course work, residency, the qualifying examination, 12 credits of dissertation, and successful defense of the dissertation. Students in the School of Nursing and Health Studies are responsible for meeting the degree requirements. It is the student's responsibility to understand fully, and comply with all the provisions of the Bulletin and written changes to their program of study. Students are provided assistance by advisors and faculty members. Requests for deviation from the program of study or school requirements are granted only by written approval from the Dean. Students who are in violation of the provisions of this Bulletin may be withdrawn unilaterally by appropriate School officials from classes, or have a stop placed upon their future enrollment. The school reserves the right to change academic requirements to include course offerings to ensure that students are receiving the latest knowledge. Changes are transmitted by written notice in the current year of the School of Nursing and Health Studies PhD Handbook located at www.miami.edu/sonhs or by the Dean.
# MSN to Ph.D. Plan of Study 41 credits

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## BSN to Ph.D. Plan of Study 62 credits

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FINANCIAL ASSISTANCE

Full-time Ph.D. students are considered for support which may include:

1. Tuition Scholarships. These awards vary in amount and are intended to assist the recipient in pursuit of study and research as required by the degree. These scholarships are awarded on a competitive basis.

2. Graduate Stipends. These cash awards, paid monthly, are intended as part of an educational assistance program for PhD degree students. The stipends require service in the form of teaching, research assistance, or other appropriate educational activities that may be designated by the supervisor of the recipient.

For further information, contact: Office of Student Services, School of Nursing and Health Studies, University of Miami, P.O. Box 248153, Coral Gables, FL 33124-3850, Ph (305) 284-4325.
The International Education and Exchange Programs (IEEP) office provides opportunities for UM students to acquire an international perspective in their academic career through studying abroad on UM designed programs or at UM exchange partner universities overseas. IEEP offers an extensive array of overseas programs in over 35 countries.

The UM-designed programs are the UM Semesters on Location, delivered in Prague, Rome, the Galilee, and the Galapagos, and the UM courses abroad, directed and taught by UM faculty members in Latin America, Asia, Europe, South Africa, and other locations. The faculty-directed courses take place during the January Intersession, Spring Break, and the Summer Sessions. For the UM Semester on Location programs, students receive UM credits and UM grades, and the courses are taught by UM professors and/or professors from overseas universities who are experts in their academic fields.

Students can also receive UM credits and grades for study at any one of UM’s over 80 exchange partner universities overseas. These programs can be undertaken for a semester, year, and/or during the summer. Among a multitude of other options, students can study marine biology on the edge of Australia’s Great Barrier Reef at James Cook University, be at the center of Europe and study business at the Vienna University of Economics and Business Administration, explore Iceland’s unspoiled nature while studying earth sciences at the University of Iceland, immerse themselves in Japanese culture and business practices at Sophia University in Tokyo, or become acquainted with the changing panorama of international relations at Uppsala University in Sweden. Many of these programs are delivered in English so foreign language proficiency is not always required.

The Schools and Colleges at UM encourage study abroad options for their students. With the assistance of the International Education and Exchange Programs office and the guidance of academic advisors, students can select a study abroad program to fit almost any major. Additionally, UM financial aid will apply to the costs of the UM programs. Students are advised to plan early so studying abroad can be incorporated into their academic plan.

Students enrolled in any study abroad program at a partner institution may not earn more than 25 percent of their credits toward any UM degree program (credit requirements may vary by major/level), including courses taught by UM faculty. A student who anticipates earning more than 25 percent of his/her degree credits while participating in a study abroad program must immediately inform his/her advisor or program chair, who will be responsible for notifying the appropriate parties so that advance approval can be obtained from the Southern Association of Colleges and Schools (SACS).

For additional information, contact International Education and Exchange Programs, PO Box 248263, Coral Gables, FL 33124-1610. Tel: 305-284-3434. Email: ieep@miami.miami. Website: www.miami.edu/studyabroad.
The Miami Semester provides the opportunity for degree-seeking students attending other colleges to spend a semester or summer in Miami living, studying and doing research at the University of Miami. Domestic or international students can take advantage of these unique discipline or topic focused programs. Each Miami Semester program is designed to highlight the programs unique to the University, taking advantage of our geographical location, nationally known faculty, and unique environmental features.

The Miami Semester is limited to degree-seeking undergraduates in good standing attending other universities and colleges. Participating students will be required to take at least one to two core courses in their chosen program. Course offerings are subject to change depending on availability. Students may be accommodated in the fall semester; however, this is determined on a case by case basis.

Spring Programs

American Studies

This program allows students to select one to two courses from among the American Studies (AMS) Program's core courses, and classes from other departments based on availability and interests. It is an interdisciplinary approach for students to reflect on the interrelated nature of subjects like, but not limited to, Sociology, Geography, History, and Anthropology, and topics that are relevant to today's society such as cultural diversity, the global economy, regional and geographical norms, and popular culture. The goal of this program is to assist in students' understanding of the world around them by analyzing events, policies, societal norms and cultures, and historical events. Students may take any combination of courses that equal at least 12 credit hours.

Core Courses:

Students must enroll in at least one (1) of the following:
- Introduction to American Studies AMS 101
- The U.S., Transnationalism, and Globalism AMS 310
- History and Culture of South Florida AMS 350

Additional Courses

- Race and Healthcare in America AMS 401

Architecture: New Urbanism

The program allows for students currently majoring in Architecture at other colleges and universities to gain perspective of the field in South Florida. Students enroll in six credits of Architectural Design and six to nine credits of related electives or courses in Urban Studies. Students will also have opportunities to participate in study abroad programs in London, Venice, and/or Spain during intersession and spring breaks as an additional enrollment option (additional tuition and program fees apply). Students are required to maintain a standard full-load of credits for the spring semester of 12-15 UM credits.
Core Courses: (students must submit a design portfolio prior to enrolling in courses)

Students enroll in one (1) of the following:
- Architectural Design VII ARC 407
- Architectural Design VIII ARC 408
- Architectural Design IX ARC 509
- Architectural Design X ARC 510

Additional Courses

- Site Study of Selected Architecture and Urbanism (Intersession/Study Abroad) ARC 323
- Management of Professional Practice ARC 452
- Advanced Visual Analysis ARC 512
- General Physics for Architectural Majors PHY 103
- Cities in Time and Space URB 301
- Other Architecture elective course offerings (Interior Design, Landscape, and Historic Preservation)

Audio Engineering

Audio Engineering allows for students currently majoring in Electrical Engineering to study areas such as circuit theory, electronics, signal processing and multimedia with audio studies in acoustics, digital audio, recording and postproduction. Students must enroll in a minimum of two Electrical Engineering courses from the core courses. Students may also opt to add courses in other areas based on availability and interests.

Core Courses:

- Introduction to Digital Signal Processing EEN 436
- Real-time Digital Signal Processing Laboratory EEN 437
- Engineering Acoustics EEN 502
- Digital Speech and Audio EEN 540

Additional Courses:

- Advanced Digital Compositing for Film and Video EEN 595
- Advanced Computer Modeling and 3D Animation EEN 596
- Advanced Audio Editing for Film and Video EEN xxx

Courses available through the Frost School of Music:

- Audio Workshop MMI 141
- Transducer Theory MMI 501

Ecosystem Science and Policy

The Certificate in Ecosystem Science and Policy provides an opportunity for students from other universities to explore the South Florida environment, ecology and culture via interdisciplinary courses and experiential learning.

Students must take at least two core courses in Ecosystem Science and Policy. Miami Semester students will complete their schedules with courses chosen from among the interdisciplinary ECS courses and from other departments based on availability and interests.
Core Courses for sophomores:

- Problems in Ecosystem Science and Policy ECS 112
- Contemporary Environmental Issues ECS 202

Core Courses for juniors and seniors:

- Contemporary Environmental Issues ECS 202
- Perspectives on Environmental Decisions ECS 302
- Interdisciplinary Approaches to Complex Human-Environmental Problems ECS 403

**International Finance and Marketing**

The Certificate in International Finance and Marketing is designed for business students from other universities who want to add an international dimension to their studies. This program allows students to select from a limited set of courses offered by the School of Business. The program focuses on the international aspects of business. The program is open to students with at least a junior standing who have met the course prerequisites. Students must take at least two courses below, but may take all four.

Core Courses:

- International Finance FIN 330
- International Marketing MKT 360
- International Monetary Economics ECO 442
- International Business Law BSL 412

**Marine Science**

The Certificate in Marine Science is a hands-on study opportunity for those interested in marine science, oceanography, geology and marine physics. Students must enroll in a minimum of three Marine Science courses. In addition, highly qualified students may be eligible for an independent study research project. Students may also opt to add courses in other areas based on availability and interests.

**Sport Administration**

Sport Administration is an opportunity for students who are interested in the ethics, leadership, and business of managing athletic organizations. Students will have the opportunity to participate in an internship that fits their interest area as well taking hands-on courses in the Department of Exercise & Sport Sciences. Internships may take place within the UM Athletic Department or local professional sport franchises. Students make take any combination of courses that equal at least 12 credit hours.

Core Courses:

- Sport Facilities and Event Management ESS 206
- Sport Marketing ESS 302
- Essential Leadership in Sports and the Professions ESS 306
- Ethics Ethical Decision Making in Sport and the Professions ESS 308
- Legal Aspects of Sport ESS 401
- Sport Information Management ESS 403
- Finance and Budget in Sport Administration ESS 405
- Seminar in Sport Administration (internship) ESS 498
The Summer Scholars Program
www.miami.edu/ssp

The Summer Scholars Program (SSP) provides a unique opportunity for high school students to study at the University of Miami for three weeks during the second summer semester and earn between 5 – 6 semester credits. Students will either live on campus or participate as a commuter. SSP is designed to expose high school students to university academics and campus life before commencing undergraduate studies. Interested high school students should seek further information and application requirements for the program on the website at www.miami.edu/ssp.

Applicants should choose one (1) area of specialization. Each specialization area has a subset of required courses*:

**Broadcast Journalism**
- Introduction to Electronic Media and Production CEM 245
- Radio Production and Performance CEM 235

**Business and Law**
- Fundamentals in Business BUS 100
- Prelaw Studies GBM 100

**Engineering**
  - **Track A: Aerospace, Architectural, Civil, Environmental, and Mechanical Engineering**
    - Introduction to Architectural, Civil, and Environmental Engineering CAE 100
    - Introduction to Aerospace and Mechanical Engineering MAE 100
  - **Track B: Biomedical, Computer, and Electrical Engineering**
    - Introduction to Biomedical Engineering BME 100
    - Introduction to Computer and Electrical Engineering EEN 100

**Filmmaking**
- Survey of Motion Pictures CMP 103
- Motion Picture Technology CMP 222

**Forensic Investigation**
- Forensic Investigation APY 100
- Introduction to Forensic Anthropology APY 200

**Health and Medicine**
- Health Promotion, Prevention, and Rehabilitation NUR 200
- Students must choose one (1) of the following:
  - Topics in Biology: Infectious Diseases BIL 195
  - Topics in Biology: Oncology BIL 194
  - Introduction to Neuroscience NEU 100

**International Relations**
- Introduction to American National Government POL 100
- Introduction to World Politics POL 200
Marine Science
   Introduction to Aquaculture MSC 105
   Marine Environments of South Florida MSC 115

Sport Administration
   Leadership, Management, and Ethics in Sports KIN 100
   Survey of Sport Administration KIN 200

Sports Medicine
   Introduction to Athletic Training KIN 105
   Explorations in Exercise Science KIN 110

* Course titles, numbers, descriptions, and credits awarded are subject to change.
SUMMER SESSIONS
www.miami.edu/summersessions

The Summer Sessions program at the University of Miami is an exceptional opportunity for students to enhance their educational goals in a concentrated time period and for the South Florida community to take part in some of the innovative and unusual courses taught by outstanding faculty and well-known guest lecturers.

Special Academic Programs – Intersessions

January and Spring Break Intersessions - www.miami.edu/intersession
May and August InterSessions – www.miami.edu/summersessions

January, Spring Break, May, and June Intersession are short term credit courses designed so you can concentrate fully on: topics not normally offered during regular semesters; getting individual quality time with distinguished faculty members; and sharing knowledge with other students.

Tuition charges for January and Spring Break Intersession are separate from and in addition to your spring tuition charges (ARE NOT included in the full time 12-20 credit hours "Flat Rate" of Spring Semester).

Due to the intense format of the Intersession courses, there are special drop and refund policies; please refer to the web site for complete details.
UNDERGRADUATE COURSES*
* 500 level courses appear in both the undergraduate and graduate course listing and may be considered undergraduate or graduate at the discretion of the department. Prerequisites, co-requisites and other course requirements are subject to change.

Architecture 802

Arts & Sciences 817
Aerospace Studies
Africana Studies
American Studies
Anthropology
Arabic
Art
Art History
Biochemistry & Molecular Biology
Biology
Chemistry
Chinese
Classics
Computer Science
Ecosystem Science and Policy
English
French
Geography
Geological Sciences
German
Greek
Haitian
Hebrew
History
International Studies
Italian
Japanese
Judaic Studies
Latin
Latin American Studies
Mathematics
Microbiology & Immunology
Military Science
Modern Languages & Literatures
Neuroscience
Philosophy
Physical Science
Physics
Political Science
Portuguese
Psychology
Religious Studies
Sociology
Spanish
Theatre Arts
Urban Studies
Women’s and Gender Studies

Business
Accounting
Business Law
Business Computer Information Systems
Economics
Executive & Special Programs
Finance
General Business & Management
Management
Management Science
Marketing

Communication
Advertising
Communication
Communication Studies
Electronic Media
Journalism
Motion Pictures
Public Relations
Visual Journalism

Education & Human Development
Educational & Psychological Studies
Kinesiology & Sport Sciences
Teaching & Learning

Engineering
Biomedical Engineering
Civil, Architectural & Environmental Engineering
Electrical and Computer Engineering
Industrial Engineering
Mechanical and Aerospace Engineering

Marine & Atmospheric Science
Atmospheric Science
Applied Marine Physics
Marine Affairs and Policy
Marine and Atmospheric Chemistry
Marine Biology and Fisheries
Marine Geology and Geophysics
Marine and Physical Oceanography
Marine Science
RSMAS – General
Music
Dance
Instrumental Performance
Keyboard Performance
Music Education and Therapy
Music Media and Industry
Music Theory and Composition
Musicology
Studio Music and Jazz
Vocal Performance

Nursing and Health Studies
Health Studies
Healthcare Sciences
Nursing

Honors and Special Programs
Freshman Seminars in Arts
Freshman Seminars in Literature
Freshman Seminars in Natural Science
Freshman Seminars in Philosophy/Religion
Freshman Seminars in Social Sciences
Honors Program
Research Training
University of Miami Experience
University Internship

International Exchange and Language Programs
Study Abroad Program
SCHOOL OF ARCHITECTURE

ARCHITECTURE

ARC101 Architecture Design I
6 credits
Fall Semester
The study of architecture as an intellectual and aesthetic discipline. Topics include concept, site, form and technique. Co requisite: ARC 111, 121.
PREREQUISITE: COREQUISITE: ARC 111, 121.

ARC102 Architecture Design II
6 credits
Spring Semester
Architectural response to shelter, space and setting requirements. Topics include programming, program analysis and design, anthropometrics, and architecture psychology. Co requisite: ARC 112, 122.

ARC110 Introduction to Architectural Design
3 credits
First & Second Summer Session
Introduction to the design process and the role of the architect in society. Building design, landscape architecture, urban planning, historic preservation, architectural theory and graphics are taught through drawing and model making in a studio setting. Open to non-architecture majors in college and high school students entering 10th, 11th and 12th grades interested in exploring the field of architecture.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

ARC111 Drawing I
3 credits
Fall Semester
Exploration and expression of ideas through increased awareness and acquisition of visual and graphic vocabulary, stressing orthographic, oblique and conical projections; light shade and shadow; freehand sketching. Co requisite: ARC 101, 121.
PREREQUISITE: COREQUISITE: ARC 101, 121.

ARC112 Drawing II
3 credits
Spring Semester
Conical projection and freehand exploration of graphic expression and representation, studies in principles of composition, perspective, form, color, materials. Co requisite: ARC 102, 122.
PREREQUISITE: ARC 101, 111. COREQUISITE: ARC 102, 122.

ARC121 Architecture and Culture
3 credits
Fall Semester
Architecture as an intellectual and aesthetic discipline. Focus on design theory, language, typology, image, form, context, and case studies. Co requisite: ARC 101, 111.
PREREQUISITE: COREQUISITE: ARC 101, 111.

ARC122 Architecture and Behavior
3 credits
Spring Semester
Those aspects of environmental psychology which affect architectural design. Studies in human behavior and the design process, application of psychological factors to the design of buildings and their environment. Co requisite: ARC 102, 112.
PREREQUISITE: ARC 101, 121. COREQUISITE: ARC 102, 112.
ARC141 On-Site Survey of European Architecture and Urbanism  
3-6 credits  
Spring Semester & First & Second Summer Session  
On site introduction to architecture and the city with a historical review of most European periods from classical to contemporary. Survey of European architectural and urbanistic precedents in important selected locations. Elective course open to all majors; lecture and seminar format.

ARC203 Architecture Design III  
6 credits  
Fall Semester  
Architectural response to natural environment and site requirements. Focus on site analysis and design, climate, access and circulation, landscape, relation to larger context. Co requisite: ARC 223.  
PREREQUISITE: ARC 102, COREQUISITE: ARC 223.

ARC204 Architecture Design IV  
6 credits  
Spring Semester  
Building materials and structure as active constituents of architecture design. Focus on orientation, enclosure, low-energy responses, selection and assembly of construction materials, short and intermediate span structural systems. Co requisite: ARC 231.  
PREREQUISITE: ARC 203, 261. COREQUISITE: ARC 231.

ARC213 Computing I  
3 credits  
Fall & Spring Semester  
An introduction to new electronic design tools and technology available to architects today. Lectures on the history and future of computing in the profession.  
PREREQUISITE: ARC 102, 111, 112 OR PERMISSION OF INSTRUCTOR.

ARC223 Architecture and the Environment  
3 credits  
Fall Semester  
Architectural response to natural environmental requirements. Focus on climate, control, natural energy use, ecosystems, energy flow, environmental intervention, case studies of indigenous buildings.  
PREREQUISITE: ARC 102, 122.

3 credits  
Fall Semester  
Material characteristics of enclosure and structural systems, case studies in traditional and modern building construction; Topics include properties of building materials: wood, masonry concrete, steel and glass construction techniques; on-site and off-site processes; exterior finishes; assembles, detailing and basic building code concepts.  
PREREQUISITE: NONE

ARC231 Building Technology: Structural Systems  
3 credits  
Spring Semester  
Structural systems: the tectonics, patterns and behavior of the elements of building structures. Topics: Equilibrium, stability, vertical and lateral building envelope and financial considerations.  
PREREQUISITE: PHY 103.
ARC267 History of Architecture I: Ancient, Medieval and Renaissance
3 credits
Fall Semester
Studies of the history of architecture and urban design. Focus on religious and
secular monuments and their settings, domestic architecture and infrastructure,
regional constructional and compositional traditions from prehistory to the end
PREREQUISITE: COREQUISITE: ARC 203.

ARC268 History of Architecture II: Baroque through Contemporary
3 credits
Spring Semester
Studies of the history of architecture and urban design. Focus on religious and
secular monuments and their settings, domestic architecture and infrastructure,
regional constructional and compositional traditions from the end of the sixteenth
century through to the present. Co requisite: ARC 204.
PREREQUISITE: COREQUISITE: ARC 204.

ARC292 Introduction to Architecture Design I
3 credits
Spring Semester
Survey of the architecture profession and introduction to architecture design for
non-architecture majors. Role, opportunities, vocabulary, visual awareness, techniques
and procedures of design.
PREREQUISITE: NONE

ARC293 Introduction to Architecture Design II
3 credits
Spring Semester
Continuation of ARC 292 and an introduction to the interactions between architecture
and the engineering disciplines for non-architecture majors. Theories of building
and site design, technology as an integral component of design, program, site,
climate and methodology.
PREREQUISITE: ARC 292.

ARC294 Introduction to the Development of Architecture
3 credits
Fall Semester
Introduction to architecture for non-architecture majors. Vocabulary, themes, principles
and processes of design, cultural, social, economic and technological influences
demonstrated through historic examples.
PREREQUISITE: SOPHOMORE STANDING OR PERMISSION OF INSTRUCTOR.

ARC301 Architecture Design
6 credits
First & Second Summer Session
Comprehensive building and site design for students transferring into the architecture
program at third year level. Topics include human, environmental, cultural and
technological factors.
PREREQUISITE: SOPHOMORE STANDING.

ARC305 Architecture Design V
6 credits
Fall Semester
Environmental systems and structure as active constituents of architectural design.
Topics include the integration of enclosure, structure, environmental and mechanical
PREREQUISITE: ARC 204. COREQUISITE: ARC 362, CAE 213.
ARC306 Architecture Design VI
6 credits Spring Semester
Government and finance as active constituents of architecture design. Topics include zoning regulations, building codes, principles of public health, safety and welfare, market and feasibility studies. Co requisite: ARC 351, CAE 313.
PREREQUISITE: ARC 305, CAE 313.

ARC323 On Site Study of Selected Architecture and Urbanism
3-6 credits Spring Semester & First & Second Summer Session
On site study of specific architectural and/or urbanistic precedents at selected locations. Focus on specific period(s) and/or architect(s). Elective course open to all majors.

ARC324 On Site Graphic Analysis of Selected Architecture and Urbanism
3 credits Spring Semester & First & Second Summer Session
On site analysis and illustration of specific architectural and/or urbanistic precedents at selected locations. Diagrams, sketches, and drawings recording, analyzing and evaluating buildings and places. Focus on specific period(s) and/or architect(s). Elective course open to all majors.

ARC362 Environmental Building Systems I
3 credits Fall Semester
Environmental and Safety Systems. Topics include mechanical - HVAC and conveyors; plumbing - fixtures and pipes; safety systems - fire safety and emergency and signal systems. Co requisite: ARC 305.
PREREQUISITE: ARC 261

ARC363 Environmental Building Systems II
3 credits Spring Semester
Principles and applications of light and acoustics. Topics include natural and artificial light - planning for sunlight, problems and solutions for interior and exterior illumination; sound - properties, problems and solutions in new and existing spaces. Principles and applications of electrical equipment and wiring design. Co requisite: ARC 306.
PREREQUISITE: ARC 362 OR PERMISSION OF INSTRUCTOR.

ARC371 Ancient Architecture
3 credits Fall Semester
History of architecture and human settlements. Western European prehistory, Egypt, Mesopotamia, Persia, Aegean and Mediterranean, Greece, Rome.
PREREQUISITE: HIS 131 AND 132, ARC 204 OR PERMISSION OF INSTRUCTOR.

ARC373 Early Christian, Byzantine, and Medieval Architecture
3 credits Fall Semester
History of architecture and human settlements. Early Christian and Byzantine architecture in Italy, the Near East, Greece, North Africa, Eastern Europe, Medieval architecture in Western Europe.
PREREQUISITE: HIS 131 AND 132, ARC 204 OR PERMISSION OF INSTRUCTOR.
ARC382 Architecture and Culture in Italy  
3 credits  
Spring Semester  
A cultural and historical framework in preparation for participation in the Rome program. A range of topics, including architecture, art, history, cinema, literature and politics presented by University faculty from a variety of disciplines. Required for participation in the Rome Program.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

ARC390 History of Cities  
3 credits  
Fall Semester  
Historical overview of the origin of cities and the development of cities in the East, West, and New World. Focus on the nature of the industrial revolution and the development of the industrial city and contemporary urban settlements.  
PREREQUISITE: ARC 204.

ARC407 Architecture Design VII  
6 credits  
Fall & Spring Semester & First & Second Summer Session  
Elective component: student and faculty select areas of in-depth study. Topics include building types, environment, energy, community design.  

ARC408 Architecture Design VIII  
6 credits  
Fall & Spring Semester & First & Second Summer Session  
Elective component: student and faculty select areas of in-depth study. Topics include building types, environment, energy, community design, etc.  
PREREQUISITE: ARC 407.

ARC452 Management of Professional Practice  
3 credits  
Fall & Spring Semester  
Overview of the practice and the profession, legal and ethical concerns, business types and management practices, traditional and non-traditional practices and services, contracts and contractual relationships.  
PREREQUISITE: ARC 306.

ARC475 Colonial Architecture  
3 credits  
Fall Semester  
History of architecture and human settlements. Colonial Architecture from the 16th through the 19th centuries in North and South America, the Caribbean, India and Africa.  
PREREQUISITE: ARC 204.

ARC476 19th and 20th Century Architecture  
3 credits  
Fall Semester  
History of architecture and human settlements. America and Europe during the 19th and 20th centuries; cultural, technological and theoretical development.  
PREREQUISITE: ARC 204 OR 292, 294 OR 371 OR 372 OR 373 OR PERMISSION OF THE INSTRUCTOR.

ARC481 Special Problems  
1- 3 credits  
Fall & Spring Semester & First & Second Summer Session  
Group or individual investigations of significant architectural issues, offered by special arrangement only.  
PREREQUISITE: PERMISSION OF PROGRAM DIRECTOR.
ARC482 Special Problems
1-3 credits  
Fall & Spring Semester & First & Second Summer Session
Group or individual investigations of significant architectural issues, offered
by special arrangement only.
PREREQUISITE: PERMISSION OF PROGRAM DIRECTOR.

ARC483 Special Problems
1-3 credits  
Fall & Spring Semester & First & Second Summer Session
Group or individual investigations of significant architectural issues, offered
by special arrangement only.
PREREQUISITE: PERMISSION OF PROGRAM DIRECTOR.

ARC500 Architecture Theory
3 credits  
Fall Semester
Architecture and Culture/Architecture and the Environment Survey of primary texts
in theory of architecture. Part 1: Focus on design theory, language, identity,
tectonics and context. Part 2: Focus on environmental theory, sustainability,
and ecosystems.

ARC501 Architecture Design and Theory I
6 credits  
Fall Semester
Cultural, human and environment component and architectural responses to these:
Social and aesthetic concepts, architectural psychology, climatic principles,
programming analysis and design.
PREREQUISITE: GRADUATE STANDING.

ARC502 Architecture Design and Theory II
6 credits  
Spring Semester
Technology component; materials, structure, and environmental control systems as
a framework for architectural design. Construction materials and methods, structural
systems, mechanical systems.
PREREQUISITE: ARC 501.

ARC503 Architectural Design and Theory III
6 credits  
Fall Semester
Legal and economic component; government and finances as active constituents of
architecture design. Zoning regulations, building codes, principles of public
health, safety and welfare, market and feasibility studies.
PREREQUISITE: ARC 502.

ARC504 Architecture Design.
6 credits  
Fall Semester
Architecture Design: Comprehensive Component. Topics include zoning regulations,
building codes, principles of public health, safety and welfare, market and feasibility
studies.
PREREQUISITE: ARC 503 OR GRADUATE STANDING.

ARC507 Architecture Design
6 credits  
Fall & Spring Semester & First & Second Summer Session
Elective component: student and faculty select areas of in-depth study. Topics
include building types, environment, energy, community design, etc.
PREREQUISITE: ARC503
ARC509 Architecture Design IX
6 credits  Fall & Spring Semester & First & Second Summer Session
Elective component: student and faculty select areas of in-depth study. Topics include building types, environment, energy, community design, etc.
PREREQUISITE: ARC 408.

ARC510 Architecture Design X
6 credits  Fall & Spring Semester & First & Second Summer Session
Elective component: student and faculty select areas of in-depth study. Topics include building types, environment, energy, community design, etc.
PREREQUISITE: ARC 509.

ARC511 Drawing
3 credits  Fall Semester
Graphic representation and exploration of visual ideas through increased awareness of visual and graphic vocabulary, stressing projections, light, shade and shadow, perspective, and freehand sketching.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF INSTRUCTOR.

ARC512 Advanced Visual Analysis
3 credits  Offered By Announcement Only
Drawing as a means of analyzing and recording visual experience. Composition, form, light, color and drawing as a primary device in the mental registration of visual experience.
PREREQUISITE: ARC 204, 112.

ARC513 Computing
3 credits  Spring Semester
An introduction to new electronic design tools and technology available to architects today. Lectures on the history and future of computing in the profession.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF INSTRUCTOR.

ARC514 Michelangelo
3 credits  Fall Semester
Drawing as a form of research across mediums to understand historical research and interpretation of Michelangelo's work.
PREREQUISITE: ARC 306, 112, 213 OR PERMISSION OF THE INSTRUCTOR.

ARC515 Computer Modeling
3 credits  Fall & Spring Semester
Three-dimensional, computer modeling and rendering. Lecture, problem solving exercises and laboratory.
PREREQUISITE: ARC 213, 513 OR PERMISSION OF THE INSTRUCTOR.

ARC516 Architectural Watercolor Renderings
3 credits  Fall Semester
This course will use freehand drawing and watercolor painting as a vehicle to study and record the urban and architectural conditions of Coral Gables and other South Florida sites. Particular emphasis will be placed on the analytical potential of sketches (recording space, light, surfaces and color).
PREREQUISITE: ARC 306 OR PERMISSION OF THE INSTRUCTOR.
ARC517 Construction Documents  
3 credits  
Fall Semester  
Working drawings and specifications. Form, content and role of constituent parts of working drawings and specifications by using case studies.  
PREREQUISITE: ARC 204 AND 261.

ARC518 Documentation of Historic Architecture  
3 credits  
First & Second Summer Session  
Principles of preservation and restoration, research methods, measured drawings, surveying methods, case studies.  
PREREQUISITE: ARC 204.

ARC519 Architecture and Color  
3 credits  
First & Second Summer Session  
This course focuses on the theory and practice of color and its application to architectural design. Topics include color history from Newton through Alber, the relationship between color practice in science versus art, and the discipline of color in architecture from the Neoclassical movement through the Modern Movement.  
PREREQUISITE: ARC 306 OR PERMISSION OF THE INSTRUCTOR.

ARC523 Interior Architecture Design  
3 credits  
Fall Semester  
Principles and technical components of interior design. Topics include activity, analysis, finishes, furniture, fixture, lighting, and acoustics.  
PREREQUISITE: ARC 204 OR PERMISSION OF THE INSTRUCTOR.

ARC524 Selected Topics in Interior Architecture Design  
3 credits  
Spring Semester  
Principles and technical components of interior design. Topics include interior volumetrics, finishes, furnishings and lighting.  
PREREQUISITE: ARC 204 OR PERMISSION OF THE INSTRUCTOR.

ARC525 Landscape Arch Design I  
3 credits  
Fall & Spring Semester  
Analysis and design of landscape spaces. Studies in historical precedent, gardens, parks, plazas, squares and response to architectural context.  
PREREQUISITE: ARC 204 OR PERMISSION OF THE INSTRUCTOR.

ARC526 Landscape Arch Design II  
3 credits  
Offered By Announcement Only  
Analysis and design of landscape spaces. Topics include ecological principles, landforms and plant materials.  
PREREQUISITE: ARC 204 OR PERMISSION OF THE INSTRUCTOR.

ARC527 Architecture Photography  
3 credits  
Offered By Announcement Only  
Photography with emphasis on architectural subjects. Introduction to visual principles, photographic equipment, materials, and techniques.  
PREREQUISITE: ARC 204.
ARC528 Historic Preservation  
3 credits  
Spring Semester  
Basic design principles for the rehabilitation of historic buildings. Evaluating character-defining details; significance analysis; context of setting issues within historic districts; applying the Secretary of the Interior's Standards for rehabilitation.  
PREREQUISITE: ARC 204.

ARC529 Research in Design-Methods and Procedures  
3 credits  
Fall & Spring Semester  
Application of research methods and procedures to design issues. Historical, descriptive, analytic, experimental research methods; tools for data manipulation and communication.  
PREREQUISITE: PERMISSION OF PROGRAM DIRECTOR.

ARC530 Building Technology II: Materials & Methods.  
3 credits  
Fall & Spring Semester  
Material characteristics of enclosure and structural systems, case studies in traditional and modern building construction; Topics include properties of building materials: wood, masonry concrete, steel and glass construction techniques; on-site and off-site processes; exterior finishes, assemblies, detailing and basic building code concepts.

ARC531 Building Technology II: Structural Systems  
3 credits  
Spring Semester  
Structural systems: The tectonics, patterns and behavior of the elements of building structures. Topics: Equilibrium, stability, vertical and lateral loads, building envelope and financial considerations.  
PREREQUISITE: PHYSICS OR PERMISSION OF THE INSTRUCTOR.

ARC532 Building Structures I  
3 credits  
First Summer Session  
The structural behavior of simple frame structures. Topics include techniques to determine basic system layout and preliminary dimensioning of key subsystems and members.  
PREREQUISITE: ARC 531.

ARC533 Building Structures II  
3 credits  
Fall Semester & Second Summer Session  
The structural behavior of complex structures. Topics include prestressed systems, waffle and space trusses, curved structures and longspan buildings.  
PREREQUISITE: ARC 532.

ARC534 The Palazzo in Italian Architecture  
3 credits  
Fall & Spring Semester  
Study of the development of the Renaissance and Baroque palazzo in Rome and other important centers of art and culture. Emphasis on the socio-political context.  
PREREQUISITE: ARC 382.

ARC535 Historic Italian Urbanism  
3 credits  
Fall & Spring Semester  
Study of Italian cities and towns from medieval to contemporary times, including a comparative analysis of history and form.  
PREREQUISITE: ARC 382.
ARC536 Italian Gardens  
3 credits Fall & Spring Semester  
Study of Italian garden design during the Renaissance, Baroque and Mannerist periods. Emphasis on historical and political context.  
PREREQUISITE: ARC 382.

ARC537 Research in Rome  
3 credits Fall & Spring Semester  
An exploration of Roman history, architecture and urban form through lectures, on site study and drawing assignments. Emphasis on chronological and spatial sequence of development.  
PREREQUISITE: ARC 382.

ARC541 Seminar on Town Design  
3 credits Fall Semester  
Introduction to the lexicon of urbanism; analytical presentations of the concepts of: region, town, neighborhood, corridor, district, and building type; interdisciplinary presentations, review, and criticism of current town and urban design projects.

ARC542 Seminar on Housing  
3 credits Offered By Announcement Only  
Introduction to domestic building typology; exploration of the concepts of low, medium, and high density housing with attention to social, environmental, and economic issues; presentations of current case studies.  
PREREQUISITE: ARC 306 OR PERMISSION OF INSTRUCTOR.

ARC543 Seminar on Retrofit of Suburbia  
3 credits Offered By Announcement Only  
Introduction to the critical reconstitution of the city; theory and history of the concepts of revitalization and redevelopment; presentations, review, and criticism of current case studies.  
PREREQUISITE: ARC 306 OR PERMISSION OF INSTRUCTOR.

ARC544 The Architecture of Palladio  
3 credits Fall Semester  
On site study of the architecture and urbanism of Andrea Palladio. Emphasis on the artistic precedents of the Veneto Region.  
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

ARC545 Urban Composition  
3 credits Offered By Announcement Only  
Survey and analytical review of urban rooms as the vessel of human activity in urban culture. Study of proportional and compositional aspects of urban rooms together with economic, social, and cultural factors. Readings and discussion format.  
PREREQUISITE: ARC 306, 502, OR PERMISSION OF INSTRUCTOR.

ARC546 Studies of Havana  
3 credits Spring Semester  
Analysis of the physical structure of a major city and its environments including an exploration of its history and iconographic themes, mapping and building studies.
ARC547 Architecture and Urban Identity
3 credits
Offered By Announcement Only
Study of the relationship between architecture and urbanism focusing on the ways by which architecture provides urban identity and image of place. Case studies relating monuments, fabric and urban plans to their culture, time and place. Lecture and seminar format.
PREREQUISITE: ARC 306 OR PERMISSION OF INSTRUCTOR.

ARC548 Seminar in Community Development
3 credits
Offered By Announcement Only
Study of the contemporary context for the development of the physical environment. Examination of public, private and third sector implementation of building and community design. Format: guest speakers, readings, discussions, and seminar.
PREREQUISITE: ARC 305, 502, OR PERMISSION OF INSTRUCTOR.

ARC550 Professional Lecture Series
3 credits
Offered By Announcement Only
Exposure to the various professional disciplines in South Florida that make contributions to the design process. Case study analysis and evaluation of current building project, from time of initial formulation through completion, including research, diagrammatic studies, site visits and lectures.

ARC551 Contemporary Theories of Architecture
3 credits
Offered By Announcement Only
Theoretical basis of modern architecture and different present currents and movements. Agrarianism, technism, orthodoxy, brutalism, scientism, revivalism, consumerism, rationalism, classicism.
PREREQUISITE: ARC 204 OR PERMISSION OF INSTRUCTOR.

ARC553 Structural Design Theory
3 credits
Offered By Announcement Only
Relationship of structural systems to architectural design. Case studies in theories of structure, form and construction.
PREREQUISITE: ARC 306 AND CAE 313.

ARC554 Architecture of South Florida
3 credits
Offered By Announcement Only
History of architecture and human settlements. Studies of significant architectural landmarks and urban design of the South Florida Region, chronological growth of Miami, Miami Beach, Coral Gables, Key West and Palm Beach.
PREREQUISITE: ARC 204 OR PERMISSION OF THE INSTRUCTOR.

ARC557 Design and Fabrication Techniques: Carved Panels
3 credits
First & Second Summer Session
Design, construction and detailing of wood as applied to furnishings and interiors. Focus: low and high relief carved wood panels. Workshop based course including research, exercises, measuring, documentation and a final project.

ARC558 Theories of Landscape Architecture
3 credits
Fall Semester
Leading theories of landscape architecture which have influenced current considerations of nature, landscape and design.
PREREQUISITE: ARC 204 OR PERMISSION OF INSTRUCTOR.
ARC561 Building Technology I: Materials and Methods.
3 credits  Fall Semester
Material characteristics of enclosure and structural systems, case studies in traditional and modern building construction. Topics include properties of building materials: wood, masonry, concrete, steel and glass construction techniques; on-site and off-site processes; exterior finishes; assemblies, detailing and basic building code concepts.
PREREQUISITE: NONE
COREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

ARC562 Environmental Building Systems I
3 credits  First Summer Session
Environmental and Safety Systems. Topics include mechanical - HVAC and conveyors; plumbing - fixtures and pipes; electrical - equipment and wiring design; safety systems - fire safety and emergency and signal systems.
PREREQUISITE: ARC 561 OR PERMISSION OF INSTRUCTOR.

ARC563 Environmental Building Systems II
3 credits  Spring Semester
Principles and applications of light and acoustics. Topics include natural and artificial light - planning for sunlight, problems and solutions for interior and exterior illumination; sound - properties, problems and solutions in new and existing spaces electrical equipment and wiring design.
PREREQUISITE: ARC 562 OR PERMISSION OF INSTRUCTOR.

ARC567 History of Architecture I: Ancient, Medieval and Renaissance
3 credits  Fall Semester
Studies of the history of architecture and urban design. Focus on religious and secular monuments and their settings, domestic architecture and infrastructure, regional constructional and compositional traditions from prehistory to the end of the sixteenth century. Co requisite: ARC 501.

ARC568 History of Architecture II: Baroque through Contemporary
0-3 credits  Spring Semester
Studies of the history of architecture and urban design. Focus on religious and secular monuments and their settings, domestic architecture and infrastructure, regional constructional and compositional traditions from the end sixteenth century through to the present. Co requisite: ARC502.

ARC569 Directed Readings
3 credits  Fall & Spring Semester & First & Second Summer Session
A structured program of readings and essays organized by the student and his/her graduate supervisor constituting a preparation for graduate research in the student's chosen area of interest.
PREREQUISITE: PERMISSION OF PROGRAM DIRECTOR.

ARC570 Modern Architecture
3 credits  Spring Semester
History of architecture, landscape, and city design in the modern era.
ARC571 Ancient Architecture
3 credits
History of architecture and human settlements. Western European prehistory, Egypt, Mesopotamia, Persia, Aegean and Mediterranean, Greece, Rome.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

ARC572 Selected Topics in World Architecture
3 credits
History of architecture and human settlements. Islamic Near East, North Africa, Hindu and Buddhist India, Nepal, S. E. Asia, China, Japan, Pre-Columbian America.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

ARC573 Early Christian, Byzantine, and Medieval Architecture
3 credits
History of architecture and human settlements. Early Christian and Byzantine architecture in Italy, the Near East, Greece, North Africa, Eastern Europe, Medieval architecture in Western Europe.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

ARC574 Renaissance Architecture
3 credits
History of architecture and human settlements. Renaissance and Baroque architecture in Italy, France, Spain and Portugal, Great Britain, Austria, Germany, and neighboring countries.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

ARC575 Colonial Architecture
3 credits
History of architecture and human settlements. Iberian and British Colonies from the 16th through the 19th centuries: North and South America, Caribbean, India and Africa.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

ARC576 19th and 20th Century Architecture
3 credits
History of architecture and human settlements. America and Europe during the 19th and 20th centuries; cultural, technological and theoretical development.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

ARC577 The Architecture of Alvar Aalto
3 credits
An examination of the architecture of Alvar Aalto through the analysis of selected buildings.
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

ARC578 Italian Rationalist Architecture
3 credits
Offered By Announcement Only
History of Italian architecture and urban design between 1914 and 1950: cultural, technological, and theoretical developments; relationship between architecture, politics and propaganda; related survey of the period in other countries (France, German, Soviet Union).
PREREQUISITE: ARC 305 OR PERMISSION OF THE INSTRUCTOR.
ARC581 Special Problems
3 credits                    Fall & Spring Semester & First & Second Summer Session
Group or individual investigations of significant architectural issues, offered by special arrangement only.
PREREQUISITE: PERMISSION OF THE INSTRUCTOR

ARC582 Special Problems
3 credits                    Fall & Spring Semester & First & Second Summer Session
Group or individual investigations of significant architectural issues, offered by special arrangement only.
PREREQUISITE: PERMISSION OF THE INSTRUCTOR

ARC583 Special Problems
3 credits                    Fall & Spring Semester & First & Second Summer Session
Group or individual investigations of significant architectural issues, offered by special arrangement only.
PREREQUISITE: PERMISSION OF THE INSTRUCTOR

ARC584 Special Problems
1- 3 credits                 Fall & Spring Semester & First & Second Summer Session
Group or individual investigations of significant architectural issues, offered by special arrangement only.
PREREQUISITE: PERMISSION OF PROGRAM DIRECTOR

ARC585 Special Problems
1- 3 credits                 Fall & Spring Semester & First & Second Summer Session
Group or individual investigations of significant architectural issues, offered by special arrangement only.
PREREQUISITE: PERMISSION OF PROGRAM DIRECTOR

ARC586 Special Problems
1- 3 credits                 Fall & Spring Semester & First & Second Summer Session
Group or individual investigations of significant architectural issues, offered by special arrangement only.
PREREQUISITE: PERMISSION OF PROGRAM DIRECTOR

ARC590 History of Cities
3 credits                                 Fall & Spring Semester
Historical overview of the origin of cities and the development of cities in the East, West, and New World. Focus on the nature of the industrial revolution and the development of the industrial city and contemporary urban settlements.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

ARC593 Computer Animation
3 credits                                 Spring Semester
Explores the use of computer animation and advanced visualization techniques in architecture with emphasis on texture and lighting, spatial choreography and story-boarding.
PREREQUISITE: ARC 415 OR PERMISSION OF INSTRUCTOR.

ARC594 Geographic Information Systems in Urban Design
3 credits                                 Spring Semester
Exploration of Geographic Information Systems (GIS) in urban design. Principles of GIS and their application to spatial analysis, data management and visualization.
PREREQUISITE: ARC 213 OR 513 OR PERMISSION OF INSTRUCTOR.
ARC596 Interactive Multimedia in Design

3 credits

Integration of text, video, sound, and computer graphics to create an interactive electronic information medium.

PREREQUISITE: ARC 213 OR 513 OR PERMISSION OF INSTRUCTOR.

Spring Semester
AIS101 The Foundations of the United States Air Force I
1 credit
Fall Semester
Survey course designed to introduce students to the United States Air Force and encourage participation in Air Force Reserve Officer Training Corps (AFROTC). Featured topics include: overview of AFROTC, special programs offered through AFROTC, mission and organization of the Air Force, brief history of the Air Force, introduction to leadership, Air Force officer career opportunities, and an introduction to communication skills. Leadership Laboratory is mandatory for AFROTC cadets and complements this course by providing cadets with followership experiences.
PREREQUISITE: MUST BE TAKEN WITH AIS150 PT LAB

AIS102 The Foundations of the United States Air Force II
1 credit
Spring Semester
Survey and follow-on course to AIS 101 designed to introduce students to the United States Air Force and encourage participation in Air Force Reserve Officer Training Corps (AFROTC). Featured topics include: introduction to leadership, Air Force Core Values, introduction to interpersonal communication and team building, and a continuation of communication skills. Leadership Laboratory is mandatory for AFROTC cadets and complements this course by providing cadets with followership experiences.

AIS150 Leadership Laboratory
0 credit
Fall & Spring Semester
Leadership Laboratory (LLAB) is a dynamic and integrated grouping of leadership developmental activities designed to meet the needs and expectations of prospective Air Force second lieutenants and complement the AFROTC academic program. It is a student planned, organized, and executed practicum conducted under the supervision of the detachment commander and commandant of cadets.

AIS201 The Evolution of USAF Air and Space Power I
1 credit
Fall Semester
Course designed to examine general aspects of air and space power through a historical perspective. Covers time period from first balloons and dirigibles to space-age global positioning systems of the Afghan/Iraqi Wars. Examines several fundamental truths associated with war in the third dimension: e.g. Principles of War and Tenets of Air and Space Power. Leadership Laboratory is mandatory for AFROTC cadets and complements this course by providing cadets with followership experiences.

AIS202 The Evolution of USAF Air and Space Power II
1 credit
Spring Semester
Continuation of AIS 201 which provides students with knowledge level understanding for general element and employment of air and space power. Discusses the importance of Air Force Core Values with use of operational examples and historical Air Force leaders. Continues to develop communication skills. Leadership Laboratory is mandatory for AFROTC cadets and complements this course by providing cadets with followership experiences.

AIS301 Air Force Leadership Studies I
3 credits
Fall Semester
Study of leadership, management fundamentals, professional knowledge, and communication skills required of Air Force junior officers. Case studies are used to examine Air Force leadership and management situations. Mandatory Leadership Laboratory complements this course by providing advanced leadership experiences in officer-type activities.
AIS302 Air Force Leadership Studies II
3 credits Spring Semester
Continuation of AIS 301 and is a study of Air Force personnel and evaluation systems, leadership ethics, and communication skills required of Air Force junior officers. Case studies are used to examine Air Force leadership and management situations. Mandatory Leadership Laboratory complements this course by providing advanced leadership experiences in officer-type activities.

AIS401 National Security Affairs/Preparation for Active Duty I
3 credits Fall Semester
Examines national security process, regional studies, and Air Force doctrine. Special topics of interest focus on civilian control of military and current issues affecting military professionalism. Continued emphasis is given to refining communication skills. Mandatory Leadership Laboratory complements this course by providing students advanced leadership experiences.

AIS402 National Security Affairs/Preparation for Active Duty II
3 credits Spring Semester
Continuation of AIS 401 which examines regional studies and advanced leadership ethics. Special topics of interest focus on the military as a profession, officership, military justice, preparation for active duty, and current issues affecting military professionalism. Continued emphasis is given to refining communication skills. Mandatory Leadership Laboratory complements this course by providing students advanced leadership experiences.

AFRICANA STUDIES
AAS150 Introduction to Africana Studies
3 credits Fall & Spring Semester & First & Second Summer Session
Experiences of African American and other African-descended peoples with emphases on social, cultural, political, etc.
PREREQUISITE: NONE

AAS260 History of Slavery in the Atlantic
3 credits Fall Semester
The emergence and eventual abolition of the Trans-Atlantic slave trade and its effects on both old and new world
PREREQUISITE: NONE

AAS290 Special Topics
3 credits Offered By Announcement Only
Content varies by semester.

AAS350 Black Leadership in the U.S.
3 credits Fall & Spring Semester
Black leaders and leadership organizations. Emphasis on their role in overcoming oppression and barriers to advancement.
PREREQUISITE: THREE CREDITS IN AAS OR PERMISSION OF INSTRUCTOR

AAS390 Special Topics
3 credits Fall & Spring Semester & First & Second Summer Session
Content varies by semester
PREREQUISITE: 3 CREDITS IN AFRICAN STUDIES OR PERMISSION OF INSTRUCTOR
AFRICANA STUDIES

AAS490 Senior Seminar in Africana Studies  
3 credits  
Fall & Spring Semester  
Content varies by semester.  
PREREQUISITE: AAS 250

AMERICAN STUDIES

AMS101 Introduction to American Studies  
3 credits  
Fall & Spring Semester  
An interdisciplinary approach to American Studies with attention to a particular theme or period. (Satisfies Social Science core requirement).

AMS301 Topics in American Studies  
3 credits  
Fall & Spring Semester  
Content varies by semester.  
PREREQUISITE: AMS 101 OR PERMISSION OF INSTRUCTOR.

AMS310 The U.S., Transnationalism, and Globalization  
3 credits  
Spring Semester  
The history of the United States within a global framework.  
PREREQUISITE: AMS 101 OR PERMISSION OF INSTRUCTOR

AMS350 History and culture of South Florida  
3 credits  
Spring Semester  
The history and culture of South Florida from a multidisciplinary perspective.  
PREREQUISITE: AMS101 OR PERMISSION OF INSTRUCTOR

AMS399 Independent Study  
1-3 credits  
Offered By Announcement Only  
By arrangement with instructor; content varies.  
PREREQUISITE: AMS 101 AND PERMISSION OF INSTRUCTOR

AMS401 Seminar in American Studies  
3 credits  
Fall & Spring Semester  
Content varies by semester.  
PREREQUISITE: SIX CREDITS IN AMS COURSES.

AMS415 Labor, migrations, and social movements in the americas  
3 credits  
Spring Semester  
Social, political, economic, and cultural issues related to migrant labor in the Americas while placing Miami at the center of analysis.  
PREREQUISITE: 3 CREDITS IN AMERICAN STUDIES OR LATIN AMERICAN STUDIES

AMS450 Popular culture in the united states  
3 credits  
Fall Semester  
Rise of various forms of popular culture, from print media to music and film, in American history.  
PREREQUISITE: 3 CREDITS IN AMERICAN HISTORY

AMS499 Independent Study  
3 credits  
Fall Semester & First & Second Summer Session  
By arrangement with instructor; content varies.  
PREREQUISITE: AMS 101 AND PERMISSION OF INSTRUCTOR
AMERICAN STUDIES

AMS501 SENIOR PROJECT
3 credits
Spring Semester
All majors must complete either an individual research project or an internship at a local cultural or civic institution. Either option must be approved by the program director.
PREREQUISITE: SENIOR STANDING

AMS505 HONORS THESIS
3 credits
Spring Semester
American Studies majors with a cumulative GPA of at least 3.5 in AMS courses and an overall GPA of at least 3.0 may earn departmental honors by completing AMS505: honors thesis. Candidates for departmental honors are responsible for finding a faculty member to serve as the thesis advisor. Students would take AMS 501 in the fall semester or the senior year and AMS 505 in the spring to complete the honors thesis.
PREREQUISITE: SENIOR STANDING, MINIMUM GPA 3.5. PERMISSION OF PROGRAM DIRECTOR

ANTHROPOLOGY

APY101 Introduction to Anthropology
3 credits
Fall & Spring Semester
A broad overview of archaeology, cultural anthropology, biological anthropology, and linguistics.

APY201 Principles of Archaeology
3 credits
Fall & Spring Semester
History, methods, and theory of archaeology with an outline of the main characteristics of the prehistoric record throughout the world.

APY202 Principles of Cultural Anthropology
3 credits
Fall & Spring Semester
Cultural anthropology, including such topics as economics, politics, kinship and families, health systems, religion, and personality.

APY203 Principles of Physical Anthropology
3 credits
Fall & Spring Semester
The origin and biological development of the human species; human evolution explored by means of the fossil record of prehistoric population; differentiation and adaptation of contemporary populations in various world environments; the comparison of humans and other primates with respect to biological and behavioral variability.

APY204 Principles of Linguistic Anthropology
3 credits
Fall Semester
Human linguistic principles of phonology, morphology, and grammar to construct a framework for understanding the operation of language in cultural context. The functions of human language in structuring ideological, economic, and political realms.

APY208 Short-Changed in the City
3 credits
Fall Semester
Marginalization plagues sub-populations in almost every large city. An anthropological view of this problem and its origins, presented through readings, discussions, lectures and field trips.
PREREQUISITE: APY 202 OR OTHER SOCIAL/BEHAVIORAL SCIENCE
APY210 Physical Anthropology and Society
3 credits Offered By Announcement Only
An evolutionary analysis of the human species from a social science perspective. History, methods, major theories, and key findings of Physical Anthropology.

APY230 The Sounds of the World's Languages
3 credits Offered By Announcement Only
The range of sounds produced by the speakers of the world's languages. An introduction to phonetics, with a focus on acoustically-oriented methods used in contemporary phonetics.
PREREQUISITE: APY 204

APY301 World Prehistory
3 credits Spring Semester
The global prehistoric record, with emphasis on the development of social complexity and ancient states.
PREREQUISITE: APY 201.

APY306 Human Evolution
3 credits Spring Semester
The macroevolution of humans using the fossil record of vertebrates, including the development of uniquely human behavioral and anatomical adaptations, and of diversity in living populations.
PREREQUISITE: APY 201, OR 203, OR PERMISSION OF THE INSTRUCTOR

APY307 Human Adaptation
3 credits Spring Semester
Human biological adaptation to different environments and stress is examined anthropologically within an evolutionary framework. Mechanisms of adaptation to temperature extremes and other climatic variables, high altitude, disease, nutritional stress, urbanization, extraterrestrial conditions, and other environmental challenges are described in relation to biological and behavioral variations among human populations. The limits of human performance and human adaptive potential in the present and future are explored.

APY308 Human Variation: Anthropology of Race
3 credits Fall Semester
Human biological diversity is viewed historically within a cross-cultural, evolutionary framework. Patterns of variation in human morphological, anatomical, physiological, biochemical, genetic, and behavioral characteristics are investigated in peoples living in different environments throughout the world. Observed differences among human populations are discussed with reference to traditional theories of racial taxonomy and modern perspectives in human classification.

APY309 Evolution of Human Behavior
3 credits Spring Semester
PREREQUISITE: APY 201 OR 202 OR 203 AND THREE ADDITIONAL CREDITS IN ANTHROPOLOGY.
COLLEGE OF ARTS AND SCIENCES

ANTHROPOLOGY

APY310 Primate Behavior and Adaptation
3 credits
Spring Semester
The taxonomy, distribution, anatomy, social behavior and adaptations to habitats of human and non-human primates as seen from an evolutionary perspective.
PREREQUISITE: APY 203 AND BIL 150 OR PERMISSION OF INSTRUCTOR.

APY315 Folk and Alternative Medicine
3 credits
Spring Semester
Historical and cultural backgrounds of health therapies, including theoretical bases of traditional ethnomedical, nonwestern, and complementary medical systems.
PREREQUISITE: ANY 200 LEVEL ANTHROPOLOGY COURSE, OR ANY 300 LEVEL NURSING COURSE, OR PERMISSION OF THE INSTRUCTOR.

APY320 The Evolution of Language
3 credits
Spring Semester
Popular contemporary hypotheses on the origins and development of language.
PREREQUISITE: APY 204

APY333 Ancient Celtic Society
3 credits
Offered By Announcement Only
Early Celtic culture and technology as reflected in the Iron Age archaeological remains of Europe.
PREREQUISITE: APY 201 AND THREE ADDITIONAL CREDITS IN ANTHROPOLOGY.

APY340 Marine Archaeology
3 credits
Spring Semester
Location, excavation, and study of submerged sites.
PREREQUISITE: APY 201 OR PERMISSION OF INSTRUCTOR.

APY345 Ancient Civilizations of Mesoamerica
3 credits
Spring Semester
Major pre-Columbian cultures of Mesoamerica, from Olmec to Aztec periods, with emphasis on ancient Maya.
PREREQUISITE: APY 201 AND THREE ADDITIONAL CREDITS IN ANTHROPOLOGY.

APY350 Ancient Cultures of the New World
3 credits
Offered By Announcement Only
The prehistoric record of the Americas, emphasizing the belief systems and social development of ancient chiefdoms and states.
PREREQUISITE: APY 201 AND THREE ADDITIONAL CREDITS IN ANTHROPOLOGY.

APY355 Ancient People of North America
3 credits
Offered By Announcement Only
The archaeological record of North America prior to European contact, exploring the relationship of art and oral history to material remains.
PREREQUISITE: APY 201 AND THREE ADDITIONAL CREDITS IN ANTHROPOLOGY.

APY356 Florida Archaeology
3 credits
Offered By Announcement Only
Archaeological remains of ancient cultures in the Florida peninsula, from initial occupation to the Colonial Period.
PREREQUISITE: APY 201 AND THREE ADDITIONAL CREDITS IN ANTHROPOLOGY.
APY360 Anthropology of Food
3 credits Fall Semester
Evolution of human diet, basic nutrition, food taboos, effects of domestication, effects of diet on skeletal remains, analysis of your own food habits, and the impact of certain foods on our biocultural evolution of our species.
PREREQUISITE: ANY 200 LEVEL ANTHROPOLOGY COURSE OR PERMISSION OF INSTRUCTOR.

APY361 Gender and Language
3 credits Fall & Spring Semester & First & Second Summer Session
the ways in which language is used in the constitution of gender from a cross-cultural perspective. Course is co-listed with WGS 361
PREREQUISITE: NONE

APY362 The Languages of the World
3 credits Spring Semester
The world's languages. The primary focus is on major differences and similarities among the structural properties of languages from diverse regions and linguistic families. In short, an introduction to linguistic typology.
PREREQUISITE: APY 204

APY376 Economic Anthropology
3 credits Offered By Announcement Only
The structure and operation of the small-scale economy in the social system is examined. The interrelationship between social and economic systems, and the formation of non-market economies.
PREREQUISITE: APY 202 AND THREE ADDITIONAL CREDITS IN ANTHROPOLOGY.

APY377 Anthropology of Political Systems and Discourse
3 credits Offered By Announcement Only
Political systems and processes in tribal societies, with special emphasis on dispute settlement, the organization of political control, and the use of oratory. Case studies from Latin American and African examples.
PREREQUISITE: APY 202 AND THREE ADDITIONAL CREDITS IN ANTHROPOLOGY.

APY385 Caribbean Cultures
3 credits Spring Semester
Caribbean societies, including ethnic diversity, production and exchange, domestic organization, and belief systems.
PREREQUISITE: APY 202 AND THREE ADDITIONAL CREDITS IN ANTHROPOLOGY.

APY386 Psychological Anthropology
3 credits Fall Semester
The interaction between personality and cultural settings. Topics include cross-cultural child rearing and enculturation, behavioral development and adjustment, “deviance,” and ethnopsychiatry.
PREREQUISITE: APY 201 OR PSY 110 AND THREE ADDITIONAL CREDITS IN EITHER ANTHROPOLOGY OR PSYCHOLOGY.

APY387 Cultural Evolution
3 credits Spring Semester
Evolution of social systems and technologies, from hunting and gathering bands through industrial states.
PREREQUISITE: APY 202 AND THREE ADDITIONAL CREDITS IN ANTHROPOLOGY.
ANTHROPOLOGY

APY390 African Cultures
3 credits  Offered By Announcement Only
Political and domestic organization, production, exchange, and belief systems of traditional African cultures, and the changes caused by increasing urbanization and modernization.
PREREQUISITE: APY 202 AND THREE ADDITIONAL CREDITS IN ANTHROPOLOGY.

APY391 Gender in Ancient Cultures
3 credits  Offered By Announcement Only
A cross-cultural examination of the role gender played in ancient complex culture areas, such as Mesoamerica, Mesopotamia, and the Mediterranean, with emphasis on using the archaeological record to reconstruct social roles.
PREREQUISITE: APY 201 AND THREE ADDITIONAL CREDITS IN ANTHROPOLOGY.

APY392 Sex and Culture
3 credits  Fall Semester
A cross-cultural examination of sex roles and sexuality; gender identity, division of labor, functions of marriage, sexual practices, reproductive control, and political relationships between the sexes.
PREREQUISITE: APY 202 AND THREE ADDITIONAL CREDITS IN ANTHROPOLOGY.

APY393 Drugs and Culture
3 credits  Offered By Announcement Only
PREREQUISITE: APY 202 AND THREE ADDITIONAL CREDITS IN ANOTHER SOCIAL/BEHAVIORAL SCIENCE.

APY394 Comparative Religion
3 credits  Fall Semester
A cross-cultural investigation of differing levels of religious belief systems examined from both etic and emic points of view.

APY395 Gender, Race & Class
3 credits  Fall Semester
PREREQUISITE: APY 202, WGS 201 OR PERMISSION OF INSTRUCTOR

APY396 Youth Culture, Identity and Globalization
3 credits  Spring Semester
Youth cultural practices and experiences in various urban contexts in the world. Particular emphasis is placed on marginalization, identity and commodification of violent practices as embedded in the globalization processes.
PREREQUISITE: APY 202 OR ANY SOCIAL AND BEHAVIORAL SCIENCES

APY397 Violence and Ritual
3 credits  Offered By Announcement Only
Various theories of ritual and violence with reference to ethnographically-based topics. It will explore the role of symbols, rituals and ideologies in shaping and contesting power within nations and other political communities.
PREREQUISITE: APY 202 OR ANY SOCIAL AND BEHAVIORAL SCIENCES

APY398 Coastal Cultures
3 credits  Spring Semester
Fishermen and their special relations to the environment, from Thailand and Sri Lanka to Alaska and the West Indies. Decision-making processes among fishermen, business concepts, responses to technology and myths of the sea.
PREREQUISITE: APY 202 AND THREE CREDITS IN ANTHROPOLOGY OR PERMISSION OF INSTRUCTOR.
ANTHROPOLOGY

APY399 The Anthropology of Kinship and Family in America
3 credits  Fall Semester
Theories of kinship and the family. It will examine emergence of new patterns of
kinship networks and construction of individuals. Ethnographic materials will
be drawn from the Americas and the Caribbean, particularly Brazil, Cuba, Haiti,
Jamaica and the United States.
PREREQUISITE: 6 CREDITS 200 LEVELS OR ABOVE IN ANTHROPOLOGY

APY405 Readings in Anthropology
1- 3 credits  Fall Semester
Supervised readings on special topics in Anthropology.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

APY406 Readings in Anthropology
1- 3 credits  Spring Semester
Supervised readings on special topics in Anthropology.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

APY413 Medical Anthropology
3 credits  Fall Semester
Cross-cultural and historical perspectives on health and illness in human evolution.
Effects of heredity, environment, and culture upon human disease ecology. Biological
and behavioral adaptations to disease.
PREREQUISITE: THREE CREDITS IN ANTHROPOLOGY, AND THREE CREDITS FROM BIOLOGY OR
NURSING.

APY414 Forensic Anthropology I: Human Osteology
3 credits  Fall Semester
Identification and interpretation of the human skeleton, including age, sex, hard
tissue pathology and traumas.
PREREQUISITE: APY 203, OR PERMISSION OF THE INSTRUCTOR.

APY415 Forensic Anthropology II: Fieldwork
3 credits  Spring Semester
The investigation, analyses, and legal aspects of human remains recovered from
crime scenes and mass disasters.
PREREQUISITE: APY 203 AND 414 OR PERMISSION OF THE INSTRUCTOR.

APY416 Bioarchaeology-Peopling the past
3 credits  Offered By Announcement Only
Contextualization of bodies in space, cultural milieu and time are the primary
focus of this course. Students will explore bioarchaeology’s history, development
and major topical concerns.
PREREQUISITE: APY 201 AND APY 203, OR PERMISSION OF THE INSTRUCTOR.

APY418 Seminar in Anthropology
3 credits  Fall & Spring Semester
Consideration of special topics in physical anthropology, linguistics, archaeology
and ethnology and their interrelationships.

APY419 Politics of the Past
3 credits  Spring Semester
PREREQUISITE: APY 201, OR PERMISSION OF THE INSTRUCTOR
ANTHROPOLOGY

APY420 Archaeology, Architecture, and the City
3 credits
Offered By Announcement Only
Ancient architectural remains in the global anthropological perspective, emphasizing the role of architecture in shaping the evolution of social and political interactions.
PREREQUISITE: APY 201 AND THREE ADDITIONAL CREDITS IN ANTHROPOLOGY.

APY421 Interpreting Bodies
3 credits
Spring Semester
PREREQUISITE: APY 202, WGS 201, OR PERMISSION OF THE INSTRUCTOR

APY422 Pseudoscience in Archaeology
3 credits
Spring Semester
Reconstructions of how people lived in the past that claim scientific validity, use the terminology of science, but are unsupported by evidence, can be called pseudoscientific. This course critically evaluates the field of pseudoscientific archaeology by applying the scientific method, logic, and common sense.
PREREQUISITE: APY 201 AND THREE ADDITIONAL APY CREDITS.

APY430 Anthropology of Sustainability
3 credits
Fall Semester
PREREQUISITE: APY 202 OR PERMISSION OF THE INSTRUCTOR

APY435 Anthropology of Nature and Environment
3 credits
Spring Semester
PREREQUISITE: APY 202 OR PERMISSION OF INSTRUCTOR

APY440 Environmental Archaeology
3 credits
Offered By Announcement Only
Theory and methodologies in the reconstruction of Quaternary environments from the archaeological record. Techniques of geoarchaeology, zooarchaeology, and paleoethnobotany.
PREREQUISITE: APY 201 AND THREE CREDITS IN BIOLOGY OR MARINE SCIENCE OR PERMISSION OF INSTRUCTOR.

APY445 Archaeology of the Ancient Maya
3 credits
Offered By Announcement Only
Seminar in ancient Maya culture, including examination of archaeological remains, epigraphy, lifeways, and art.
PREREQUISITE: APY 201 AND THREE ADDITIONAL CREDITS IN ANTHROPOLOGY.

APY477 Sacrifice and Ritual
3 credits
Fall Semester
Rituals from both tribal and other societies considered in a framework of a general theory of symbols and practice. Structure and function of sacrifice in the definition of cultural categories, concepts of morality, and the general relationship of humans to the supernatural.
PREREQUISITE: APY 394 OR PERMISSION OF THE INSTRUCTOR.

APY484 Anthropological Theory
3 credits
Spring Semester
Theoretical frameworks directing data collection and research methodology in anthropology.
PREREQUISITE: APY 202 AND THREE ADDITIONAL CREDITS IN ANTHROPOLOGY.

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APY485 Archeological Theory and Technique
3 credits Offered By Announcement Only
Theoretical traditions that shape modern archaeological research design and interpretation.
PREREQUISITE: APY 201 AND THREE ADDITIONAL CREDITS IN ANTHROPOLOGY.

APY501 Methods of Anthropological Research
3-6 credits Spring Semester
Concentration on research methods for Cultural, Archaeological, Linguistic, and/or Biological Anthropology.
PREREQUISITE: SIX CREDITS IN ANTHROPOLOGY AT 300 LEVEL OR ABOVE.

APY502 Field Studies in Anthropology
3-6 credits Fall & Spring Semester & First Summer Session
Field research in advanced topics in Cultural, Archaeological, Linguistic and/or Biological Anthropology. Preparation of data for professional presentation and publication is stressed.
PREREQUISITE: SIX CREDITS IN ANTHROPOLOGY AT 300 LEVEL OR ABOVE AND WRITTEN PERMISSION FROM INSTRUCTOR.

APY505 Museum Internship
3 credits Fall & Spring Semester
Field work and on-site experience in museum studies conducted in conjunction with the major museums in Miami. Training and research in methods and techniques in museology.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

APY506 Workshop in Anthropology
3-6 credits Fall & Spring Semester
This course is designed for upper level and graduate students to participate in special topics in Anthropology and related fields.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

APY512 Advanced Medical Anthropology
3 credits Fall & Spring Semester
Applications of theories and methods of medical anthropology to problems in human health and disease.
PREREQUISITE: APY 413, OR THREE CREDITS IN NURSING, OR THREE CREDITS IN EPIDEMIOLOGY AND PUBLIC HEALTH, OR PERMISSION OF THE INSTRUCTOR.

APY518 Advanced Seminar in Anthropology
3 credits Fall & Spring Semester
Specialized topics in Anthropology to involve students into current research specializations.
PREREQUISITE: SIX CREDITS IN ANTHROPOLOGY AT 300 LEVEL OR ABOVE OR PERMISSION OF INSTRUCTOR.

ARABIC

ARB101 Elementary Arabic I
3 credits Fall Semester
Fundamental grammatical principles; drill in pronunciation; simple reading and translation. Closed to native speakers.

ARB102 Elementary Arabic II
3 credits Spring Semester
Reading and translation; oral and written exercises. Closed to native speakers.
Closed to native speakers.
PREREQUISITE: ARB 101 OR THE EQUIVALENT. CLOSED TO NATIVE SPEAKERS.
AR200 Advanced Arabic
3 credits
Fall Semester
Continuation of Arabic 201. Readings designed to integrate listening comprehension, speaking, reading, writing skills. Discussion of Arab society, history and culture. Prerequisite: ARB 201 - Closed to native speakers. Open to Heritage speakers not formally educated in Arabic.
PREREQUISITE: ARB 20R OR THE EQUIVALENT

AR201 Intermediate Arabic
3 credits
Fall Semester
Reading and translation; oral and written exercises. Closed to native speakers. Closed to native speakers.
PREREQUISITE: TWO SEMESTERS OF ARABIC OR THE EQUIVALENT. CLOSED TO NATIVE SPEAKERS.

AR202 Intermediate Arabic II
3 credits
Spring Semester
Continuation of Arabic 201. Readings designed to integrate listening comprehension, speaking, reading, writing skills. Discussion of Arab society, history and culture. Closed to native speakers.
PREREQUISITE: ARABIC 201 - CLOSED TO NATIVE SPEAKERS.

AR310 Topics in Arabic Studies in Translation
3 credits
Offered By Announcement Only
Topics within the main linguistic, literary, and cultural facets of the Arabic-speaking world, including language in society, gender and sexuality, immigration, and literary, cinematic, and artistic representations of central themes or issues. Conducted in English. Writing credit. May be repeated for credit if topics vary.
PREREQUISITE: ENG 106 AND A 200-LEVEL COURSE IN HUMANITIES OR SOCIAL SCIENCES; OR PERMISSION OF INSTRUCTOR

AR400 Levantine Colloquial Arabic
3 credits
Fall Semester
PREREQUISITE: ARB 102 OR THE EQUIVALENT

AR591 Directed Readings
1- 3 credits
Offered By Announcement Only
PREREQUISITE: ONE ARB COURSE AT 200-LEVEL OR HIGHER AND PERMISSION OF THE INSTRUCTOR

ART
ART10T Art Appreciation
0 credit
Not Offered; Transfer Credit Only
PREREQUISITE: MDCC TRANSFER COURSE

ART101 Introduction to Drawing I
3 credits
Fall & Spring Semester & First Summer Session
Contour, cross-contour, perspective, proportion, chiaroscuro, and gesture in pictorial composition.

ART102 Introduction to Drawing II
3 credits
Fall & Spring Semester
Experimentation, chance, exaggeration, movement, texture, and color in pictorial composition.

ART103 Two-Dimensional Design
3 credits
Fall & Spring Semester & First & Second Summer Session
Line, rhythm, shape, pattern, value and color in pictorial composition.
ART104 Three-Dimensional Design
3 credits  Fall & Spring Semester & Second Summer Session
Basic 3D design principles to include: structure, shape, volume, and weight.

ART105 Figure Drawing
3 credits  Fall & Spring Semester
Drawing the human figure: proportion, anatomy, perspective, gesture, and expressive line.
PREREQUISITE: ART 101.

ART106 Issues in Art Making
3 credits  Fall Semester
Survey of theoretical, historical and contemporary approaches.
PREREQUISITE: ART 101; 103 OR 104, OR PERMISSION OF INSTRUCTOR.

ART107 Introduction to Drawing III
3 credits  Fall Semester
Continuation of ART 101 with emphasis on Renaissance perspective and alternative systems of spatial representation. Survey of materials and methods. Introduction of color.
PREREQUISITE: ART 101.

ART108 Figure in Clay I
3 credits  Fall & Spring Semester
Modeling the human figure in clay; proportion, anatomy, volume, gesture and form.
PREREQUISITE: NONE

ART109 Introduction to Electronic Media
3 credits  Fall & Spring Semester
Computer skills for desktop publishing and digital imaging.

ART180 Studies in Studio Art
1-3 credits  Not Offered; Transfer Credit Only
Studio studies taken at other institutions with no direct equivalents.

ART181 Studies in Studio Art
1-3 credits  Not Offered; Transfer Credit Only
Studio studies taken at other institutions with no direct equivalents.

ART182 Studies in Studio Art
1-3 credits  Not Offered; Transfer Credit Only
Studio studies taken at other institutions with no direct equivalents.

ART183 Studies in Studio Art
1-3 credits  Not Offered; Transfer Credit Only
Studio studies taken at other institutions with no direct equivalents.

ART184 Studies in Studio Art
1-3 credits  Not Offered; Transfer Credit Only
Studio studies taken at other institutions with no direct equivalents.

ART185 Studies in Studio Art
1-3 credits  Not Offered; Transfer Credit Only
Studio studies taken at other institutions with no direct equivalents.
ART200 Intro to Concepts and Techniques in Digital Video
3 credits Offered By Announcement Only
An introduction to digital video as a means of artistic expression and its unique approach to technology. A hands on approach to beginning video art production.
PREREQUISITE: SUMMER SCHOLAR STUDENT ONLY.

ART202 Introduction to Painting
3 credits Fall & Spring Semester
Materials and techniques of easel painting.
PREREQUISITE: ART 101 AND 103, OR PERMISSION OF INSTRUCTOR.

ART210 Introduction to Photography
3 credits Fall & Spring Semester & First Summer Session
Camera techniques and darkroom procedures for black and white photography.

ART217 Introduction to Sculpture
3 credits Fall & Spring Semester
Integrated approach to concept development, craftsmanship and appropriate use of materials.
PREREQUISITE: ART 101 AND 104 OR PERMISSION OF INSTRUCTOR.

ART251 Intaglio/Relief I
3 credits Offered By Announcement Only
Drypoint, engraving, etching, aquatint, and softground; relief and intaglio printed collographs; relief printing from linoleum.
PREREQUISITE: ART 101 AND 103 AND 109, OR PERMISSION OF INSTRUCTOR.

ART252 Lithography I
3 credits Offered By Announcement Only
Beginning lithography in black and white from stones, aluminum plates, and photo plates.
PREREQUISITE: ART 101 AND 103 AND 109 OR PERMISSION OF INSTRUCTOR.

ART253 Silkscreen I
3 credits Offered By Announcement Only
Beginning silkscreen: monotyping with screens, reduction printing, multiple run silkscreen printing and beginning photo silkscreen.
PREREQUISITE: ART 101 AND 103 AND 109 OR PERMISSION OF INSTRUCTOR.

ART254 Computer Applications for Printmaking
3 credits Offered By Announcement Only
Software programs used as printmaking manipulation tools to aid in the planning of prints.
PREREQUISITE: ART 101, 103, AND 109 OR PERMISSION OF INSTRUCTOR.

ART261 Hand-built Ceramics I
3 credits Fall & Spring Semester
Beginning hand-building techniques: pinching, coiling, slab construction; introduction to glazing and firing.
PREREQUISITE: NONE.

ART262 Wheel Thrown Ceramics I
3 credits Fall & Spring Semester
Wheel throwing, glazing and firing.
PREREQUISITE: NONE.
ART263 Introduction to Glass Blowing  
3 credits                                                       Fall & Spring Semester
Forming shapes and vessels from molten glass by the use of a blow pipe and glass tools.
PREREQUISITE: ART 104 OR PERMISSION OF INSTRUCTOR

ART280 Studies in Studio Art  
1- 3 credits                                                       Not Offered; Transfer Credit Only
Studio studies taken at other institutions with no direct equivalents.

ART281 Studies in Studio Art  
1- 3 credits                                                       Not Offered; Transfer Credit Only
Studio studies taken at other institutions with no direct equivalents.

ART282 Studies in Studio Art  
1- 3 credits                                                       Not Offered; Transfer Credit Only
Studio studies taken at other institutions with no direct equivalents.

ART283 Studies in Studio Art  
1- 3 credits                                                       Not Offered; Transfer Credit Only
Studio studies taken at other institutions with no direct equivalents.

ART284 Studies in Studio Art  
1- 3 credits                                                       Not Offered; Transfer Credit Only
Studio studies taken at other institutions with no direct equivalents.

ART285 Studies in Studio Art  
1- 3 credits                                                       Not Offered; Transfer Credit Only
Studio studies taken at other institutions with no direct equivalents.

ART291 Graphic Design I  
3 credits                                                       Fall & Spring Semester
A comprehensive approach to understanding design fundamentals and the practice of graphic communications.
PREREQUISITE: ART 109

ART292 Multimedia I/ Web Design  
3 credits                                                       Fall & Spring Semester
Introduction to web design using several current time-based media.
PREREQUISITE: ART 109

ART293 Typography  
3 credits                                                       Fall & Spring Semester
Type and image compositions, history, arrangement, style, aesthetics of printed communications, type software and calligraphy.
PREREQUISITE: ART 291 OR PERMISSION OF INSTRUCTOR.

ART294 Multimedia II/ Animation  
3 credits                                                       Fall & Spring Semester
Animation using time-based media.
PREREQUISITE: ART 292
ART301 Intermediate Painting I
3 credits Fall & Spring Semester
Painting in oil and acrylic. Emphasis on experimentation and creative expression.

ART302 Intermediate Painting II
3 credits Fall & Spring Semester
Continuation of ART 301.
PREREQUISITE: ART 301.

ART305 Intermediate Figure Drawing
3 credits Fall & Spring Semester
Continuation of ART 105.
PREREQUISITE: ART 105.

ART308 Figure in Clay II
3 credits Fall & Spring Semester
Continuation of ART 108
PREREQUISITE: ART 108 OR PERMISSION OF INSTRUCTOR.

ART310 Intermediate Photography I
3 credits Fall & Spring Semester
Fine art photography in black and white. Continuation of ART 210. Emphasis on experimentation and creative expression.

ART311 Color Photography
3 credits Fall & Spring Semester
Fine Art photography in color. Emphasis on craftsmanship and creative expression.
PREREQUISITE: ART 310.

ART312 Introduction to Digital Photography
3 credits Fall & Spring Semester
Introduction to the technology of electronic/computer digitized photography.
PREREQUISITE: ART 310 AND 311.

ART317 Intermediate Sculpture I
3 credits Fall & Spring Semester
Incorporation of symbol and metaphor to achieve meaning, use of additional materials and technical processes.
PREREQUISITE: ART 217.

ART318 Intermediate Sculpture II
3 credits Fall & Spring Semester
Continuation of ART 317.
PREREQUISITE: ART 317.

ART319 Sculpture in Architecture & Science
3 credits Offered By Announcement Only
The principles of 3-D design and sculpture as applied to architectural and engineering uses, both functional and aesthetic.
PREREQUISITE: ART 104
ART351 Intaglio/Relief II  
3 credits  
Offered By Announcement Only  
Continuation of ART 251. Additional processes such as mezzotint, relief printing from woodblocks, multiple block printing, photographic xerox transfers and photo etching.  
PREREQUISITE: ART 251.

ART352 Lithography II  
3 credits  
Offered By Announcement Only  
Continuation of ART 252. Color printing from stones, aluminum plates and photo litho plates. Combination of lithography with other print media.  
PREREQUISITE: ART 252.

ART353 Silkscreen II  
3 credits  
Offered By Announcement Only  
Continuation of ART 253, including silk-screening on canvas, larger format work, and advanced photo silkscreen techniques.  
PREREQUISITE: ART 253.

ART354 Computer Assisted Printmaking: Lithography and Silkscreen  
3 credits  
Offered By Announcement Only  
The use of inkjet and laser printers to make positives for black and white and process color work in photo lithography; custom color separations for multiple screen printing.  
PREREQUISITE: ART 254 OR PERMISSION OF INSTRUCTOR.

ART361 Hand-built Ceramics II  
3 credits  
Fall & Spring Semester  
Continuation of ART 261.  
PREREQUISITE: ART 261 OR PERMISSION OF INSTRUCTOR.

ART362 Wheel Thrown Ceramics II  
3 credits  
Fall & Spring Semester  
Continuation of ART 262.  
PREREQUISITE: ART 262 OR PERMISSION OF INSTRUCTOR.

ART363 Cast Glass Processes  
3 credits  
Fall Semester  
The art of cast glass including sand casting and lost wax techniques.  
PREREQUISITE: ART 104 OR PERMISSION OF INSTRUCTOR.

ART364 Intermediate Glass Blowing  
3 credits  
Fall & Spring Semester  
Exploration of glass working techniques.  
PREREQUISITE: ART 263.

ART380 Studies in Studio Art  
1-3 credits  
Not Offered; Transfer Credit Only  
Studio studies taken at other institutions with no direct equivalents.

ART381 Studies in Studio Art  
1-3 credits  
Not Offered; Transfer Credit Only  
Studio studies taken at other institutions with no direct equivalents.
ART382 Studies in Studio Art
1-3 credits Not Offered; Transfer Credit Only
Studio studies taken at other institutions with no direct equivalents.

ART383 Studies in Studio Art
1-3 credits Not Offered; Transfer Credit Only
Studio studies taken at other institutions with no direct equivalents.

ART384 Studies in Studio Art
1-3 credits Not Offered; Transfer Credit Only
Studio studies taken at other institutions with no direct equivalents.

ART385 Studies in Studio Art
1-3 credits Not Offered; Transfer Credit Only
Studio studies taken at other institutions with no direct equivalents.

ART391 Graphic Design II
3 credits Fall & Spring Semester
Development of form and conceptual design. Contemporary visual rhetorical strategies such as metaphors, puns, irony and methonymy.
PREREQUISITE: ART 291

ART392 Multimedia III
3 credits Fall & Spring Semester
Video art, multimedia, installation art and interactive animation.
PREREQUISITE: ART 109

ART401 Advanced Painting I
3 credits Fall & Spring Semester
Development of a personal style in painting.
PREREQUISITE: ART 302.

ART402 Advanced Painting II
3 credits Fall & Spring Semester
Continuation of ART 401.
PREREQUISITE: ART 401.

ART405 Advanced Figure Drawing
3 credits Fall & Spring Semester
Continuation of ART 305.
PREREQUISITE: ART 305.

ART410 Advanced Photography I
3 credits Fall & Spring Semester
Development of a personal style in black and white, color, and/or digital photography.
PREREQUISITE: ART 311 AND 312.

ART411 Intermediate Digital Photography
3 credits Offered By Announcement Only
Digital photographic imaging with an emphasis on computer integration of silver based and alternative processes.
PREREQUISITE: ART 312 AND 410.
ART417 Advanced Sculpture I
3 credits
Fall & Spring Semester
Individual and collaborative installation and site-specific art.
PREREQUISITE: ART 318.

ART418 Advanced Sculpture II
3 credits
Fall & Spring Semester
Development of a personal visual vocabulary.
PREREQUISITE: ART 417.

ART451 Intaglio/Relief III
3 credits
Offered By Announcement Only
Continuation of ART 351.
PREREQUISITE: ART 351.

ART452 Lithography III
3 credits
Offered By Announcement Only
Continuation of ART 352.
PREREQUISITE: ART 352.

ART453 Silkscreen III
3 credits
Offered By Announcement Only
Continuation of ART 353.
PREREQUISITE: ART 353.

ART454 Computer Assisted Printmaking: Intaglio and Relief
3 credits
Offered By Announcement Only
Continuation of ART 354, photo etching and relief processes.
PREREQUISITE: ART 354 OR PERMISSION OF INSTRUCTOR.

ART461 Figure in Clay III
3 credits
Fall & Spring Semester
Advanced modeling from the figure. Emphasis on anatomy, line, gesture, volume, proportions and the expressive handling of clay.
PREREQUISITE: ART 361 OR PERMISSION OF INSTRUCTOR.

ART462 Advanced Ceramics
3 credits
Fall & Spring Semester
Development of expressive skills in either hand building or wheel throwing techniques.
PREREQUISITE: ART 361 OR 362.

ART463 Advance Topics in Ceramics
3 credits
Fall & Spring Semester
Changing topics/ Advance problems in ceramics processes.
PREREQUISITE: ART 361 OR ART 362 OR PERMISSION OF INSTRUCTOR.

ART491 Graphic Design III
3 credits
Fall & Spring Semester
Advanced page layout coupled with extensive use of typography with applications in page design for advertising and collateral projects.
PREREQUISITE: ART 391.
ART492 Multimedia IV  
3 credits \hspace{1em} Offered By Announcement Only  
Video art and multimedia installations/independent study.  
PREREQUISITE: ART 292, 294, 392

ART493 Illustration  
3 credits \hspace{1em} Offered By Announcement Only  
Contemporary illustration for print, new media, portfolio and exhibition.  
PREREQUISITE: ART 109 AND THREE ADDITIONAL CREDITS IN ART.

ART494 Critical Issues in Design and Culture  
3 credits \hspace{1em} Offered By Announcement Only  
Analytical and critical approach to graphic design/multimedia practice.  
PREREQUISITE: ART 491.

ART499 Honors Thesis  
3- 6 credits \hspace{1em} Fall & Spring Semester  
Formal thesis and project including an exhibition supervised by member of the department faculty.  
PREREQUISITE: B.F.A. CANDIDATE, SENIOR STANDING AND ACCEPTANCE IN DEPARTMENTAL HONORS PROGRAM.

ART501 Advanced Painting III  
1- 6 credits \hspace{1em} Fall & Spring Semester  
Course content decided between student and professor.  
PREREQUISITE: ART 402.

ART502 Advanced Painting IV  
1- 6 credits \hspace{1em} Fall & Spring Semester  
Continuation of ART 501.  
PREREQUISITE: ART 501

ART503 Advanced Painting V  
1- 6 credits \hspace{1em} Fall & Spring Semester  
Course content decided between student and professor. An independent study course may be repeated.  
PREREQUISITE: ART 502

ART504 Advanced Painting VI  
1- 6 credits \hspace{1em} Offered By Announcement Only  
Course content decided between student and professor. An Independent Study course may be repeated.  
PREREQUISITE: ART 503

ART505 Advanced Painting VII  
1- 6 credits \hspace{1em} Offered By Announcement Only  
Current readings and/or technical concerns not covered in the regular curriculum.  
Course content will vary each semester.  
PREREQUISITE: ART 504

ART509 Independent Study in Other Media  
1- 6 credits \hspace{1em} Offered By Announcement Only  
Course content decided between student and professor. Independent Study course may be repeated.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.
ART510 Advanced Photography III
3 credits  Fall & Spring Semester
Course content decided between student and professor.
PREREQUISITE: ART 411.

ART511 Advanced Photography IV
3 credits  Fall & Spring Semester
Continuation of ART 510.
PREREQUISITE: ART 510.

ART512 Independent Study in Photography
1-6 credits  Fall & Spring Semester
Course content decided between student and professor. An independent Study course may be repeated.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

ART517 Advanced Sculpture III
3 credits  Fall & Spring Semester
Examination of ongoing work in relationship to historical and contemporary interpretations issues.
PREREQUISITE: ART 418 AND PERMISSION OF INSTRUCTOR

ART518 Advanced Sculpture IV
3 credits  Fall & Spring Semester
Continuation of ART 517.
PREREQUISITE: ART 517.

ART519 Independent Study in Sculpture
1-6 credits  Fall & Spring Semester
Course content decided between student and professor. An Independent Study course may be repeated.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

ART551 Intaglio/Relief IV
3 credits  Offered By Announcement Only
Advanced work in intaglio/relief processes: course requirements decided between student and professor.
PREREQUISITE: ART 451.

ART552 Lithography IV
3 credits  Offered By Announcement Only
Advanced work in lithography: course requirements decided between student and professor.
PREREQUISITE: ART 452.

ART553 Silkscreen IV
3 credits  Offered By Announcement Only
Advanced work in silkscreen.
PREREQUISITE: ART 453.

ART554 Computer Assisted Printmaking
3 credits  Offered By Announcement Only
Advanced work in computer assisted printmaking; course requirements decided between student and professor.
PREREQUISITE: ART 454 OR PERMISSION OF INSTRUCTOR.
ART555 Topics in Printmaking
1-6 credits Offered By Announcement Only
Current readings and/or technical concerns not covered in the regular curriculum.
Course content will vary each semester.
PREREQUISITE: ANY 400 LEVEL PRINTMAKING CLASS.

ART562 Contemporary Ceramic Art
3 credits Fall & Spring Semester
Development of artistic style and technical abilities in relation to contemporary
patterns in ceramic art.
PREREQUISITE: ART 462 OR ART 463 OR PERMISSION OF INSTRUCTOR

ART563 Independent Study in Ceramics/Glass
1-6 credits Fall & Spring Semester
Course content decided between student and professor. An Independent Study course
may be repeated.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

ART564 Directed Research and Projects in Ceramics/Glass
3 credits Fall & Spring Semester
Ceramic/glass approaches from early history to contemporary period, and the development
of technical ability.
PREREQUISITE: ART 561 OR PERMISSION OF INSTRUCTOR.

ART591 Portfolio/Business of Design
3 credits Offered By Announcement Only
Individually supervised graphic design portfolio. Professional practices in design.
PREREQUISITE: ART 491.

ART592 Special Projects/Multimedia/Portfolio
3 credits Offered By Announcement Only
Video Art, print design, illustration or multimedia portfolio preparation.
PREREQUISITE: ART 292.

ART593 Seminar in Professional Practices
1-6 credits Fall & Spring Semester
Advanced course with a required placement in a professional design or multimedia
setting. Classroom sessions on professional topics and issues. Portfolio required.
PREREQUISITE: SENIOR STANDING.

ART599 Exhibition Preparation
3 credits Fall & Spring Semester
A seminar class devoted to the preparatory work needed to plan and promote a solo
exhibition, including installation/lighting concerns. Preliminary written assignments
will also be given in preparation for ART 710 Thesis.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

ART HISTORY

ARH107 History of Photography
3 credits Spring Semester
A study of photography as a visual medium of expression and communication: a chronological
examination of its origins, styles and uses.

ARH131 Survey of Western Art I
3 credits Fall & Spring Semester & First & Second Summer Session
The art of western cultures from pre-history through the Middle Ages.
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ART HISTORY

ARH132 Survey of Western Art II
3 credits  Fall & Spring Semester & First & Second Summer Session
The art of western cultures from the Renaissance through the 20th century.

ARH133 Art of Non-European Cultures
3 credits  Offered By Announcement Only
The art of non-European cultures with selections from Africa, Oceania, Asia, and/or the Native Americas.

ARH134 Ancient American Art through the Contact Period
3 credits  Offered By Announcement Only
Indigenous American arts (Andean South America, Mesoamerica, Native North America) produced in antiquity through the European contact period.

ARH200 Islamic Art
3 credits  Offered By Announcement Only
Students in this course will study Islam as a religious and political entity and will analyze how the Islamic world defined itself in the realm of cultural production. This course will analyze a variety of Islamic artistic media, including architecture, manuscript illumination, textiles, ceramics, and small-scale luxury objects. Artworks from the 7th to the 17th century, created in a geographic area extending from Spain to India, will be studied in order to provide a general overview of artistic production in diverse Islamic lands.

ARH220 Student Docent Practicum at the Lowe Art Museum
1 credit  Fall Semester

ARH225 Introduction to Museum Studies
3 credits  Offered By Announcement Only

ARH233 European Visions of the New World
3 credits  Offered By Announcement Only
Survey of the European view of the Americas (16th-18th centuries) using prints, paintings, drawings, and illustrations in travel accounts.

ARH260 Islamic Art
3 credits  Fall Semester
Islamic art from the 7th to the 17th century including architecture, manuscript illumination, textiles, ceramics, and small-scale luxury objects. Study of Islam as a religious and political entity showing how the Islamic world defined itself in cultural creation.

ARH270 Spanish Art
3 credits  Spring Semester
A chronological study from prehistory to the present, addressing significant periods in Spanish art history, and establishing the unique characteristics of this art. How the effects of historical conditions (Islamic presence on the peninsula, American colonies, Franco) have defined Spain as distinct from its European neighbors.
ARH300 Spanish Art
3 credits
Offered By: Announcement Only
This course will study art produced on the Iberian Peninsula from the prehistoric period to the present day. It will proceed chronologically, addressing significant periods in Spanish art history, such as Roman, Islamic, Romanesque, Golden Age, Baroque and early Modern Spain. The aim of the course is to establish the unique characteristics of Spanish art, and how historical events (Islamic presence on the peninsula, American colonies, the regime of Franco) defined Spain as distinct from its European neighbors. The Spanish influence in art and architecture has been far-reaching, particularly in the Americas, and we will explore this influence in the early modern and contemporary periods in a variety of American locations.
PREREQUISITE: NONE

ARH321 Andean Art
3 credits
Offered By: Announcement Only
South American art from formative times through the Incan empire and the Spanish conquest (A.D. 1521).
PREREQUISITE: 3 CREDITS IN ART HISTORY

ARH322 Mesoamerican Art
3 credits
Offered By: Announcement Only
From Olmec Beginnings (ca 1,500 B.C.) through the Teotihuacan, the Mayan and the Aztec cultures to the Spanish Conquest (A.D. 1521).
PREREQUISITE: 3 CREDITS IN ART HISTORY

ARH323 Native American Art
3 credits
Offered By: Announcement Only
From the cultures of the Archaic Woodlands and the ancient Southwest (ca. 6,000 B.C.) to the present.
PREREQUISITE: 3 CREDITS IN ART HISTORY

ARH326 The Art of South Asia
3 credits
Fall Semester
The Arts of South Asia with selections from India and Thailand.
PREREQUISITE: 3 CREDITS IN ART HISTORY.

ARH327 The Art of East Asia
3 credits
Spring Semester
The Art of East Asia with selections from China, Korea, and Japan.
PREREQUISITE: 3 CREDITS IN ART HISTORY.

ARH332 Greek Art
3 credits
Offered By: Announcement Only
The art of ancient Greek civilization.
PREREQUISITE: ARH 131 OR HIS 221.

ARH333 Roman Art
3 credits
Offered By: Announcement Only
Roman art from the 1st century B.C. through the 4th century A.D.
PREREQUISITE: ARH 131 OR HIS 221.
ARH335 Early Christian and Byzantine Art
3 credits  Offered By Announcement Only
Christian art from the second through the fifteenth centuries in Rome and the Byzantine Empire.
PREREQUISITE: ARH 131 OR HIS 221.

ARH336 Medieval Art
3 credits  Offered By Announcement Only
Western European art from the fourth through the twelfth century.
PREREQUISITE: ARH 131 OR HIS 221.

ARH337 Italian Renaissance Art
3 credits  Offered By Announcement Only
The painting, sculpture, and architecture of Florence in the fifteenth century.
PREREQUISITE: ARH 132 OR HIS 221.

ARH338 Sixteenth Century Italian Art
3 credits  Offered By Announcement Only
The painting, sculpture, and architecture of Italy in the sixteenth century.
PREREQUISITE: ARH 132 OR HIS 221.

ARH339 Northern Renaissance Art
3 credits  Offered By Announcement Only
The painting of France and the Netherlands in the fourteenth and fifteenth centuries.
PREREQUISITE: ARH 132 OR HIS 221.

ARH340 Baroque Art
3 credits  Offered By Announcement Only
Art and architecture of the seventeenth century, focusing on major cultural centers in Europe and the Americas.
PREREQUISITE: ARH 132 OR HIS 222.

ARH341 Eighteenth-Century European Art
3 credits  Offered By Announcement Only
European art from 1700-1820, including Rococo and Neoclassicism, ending with Goya in Spain.
PREREQUISITE: ARH 132 OR HIS 222.

ARH342 Nineteenth-Century European Art
3 credits  Offered By Announcement Only
Neo-Classicism, Romanticism, Realism, Impressionism, 1760-1900.
PREREQUISITE: ARH 132 OR HIS 222.

ARH343 Modern Art
3 credits  Fall Semester
Cezanne to Surrealism. Primarily European Art c. 1880-1940 in the context of the development of Modernism and its aesthetic theories.
PREREQUISITE: ARH 132, HIS 222 OR THREE CREDITS OF HUMANITIES AT THE 300 LEVEL OR ABOVE.
ARH344 Contemporary Art
3 credits
Spring Semester
American and European Art from the Second World War to the present in its social, political, and theoretical contexts.
PREREQUISITE: ARH 132, HIS 222, OR THREE CREDITS OF HUMANITIES AT THE 300 LEVEL OR ABOVE.

ARH345 Art in the United States
3 credits
Colonial Art through the Armory Show c. 1750-1920.
PREREQUISITE: ARH 132, HIS 222, OR THREE CREDITS OF HUMANITIES AT THE 300 LEVEL OR ABOVE.

ARH346 History of Graphic Design
3 credits
Evolution of Graphic Design from the invention of writing through the twentieth century concentrating on contemporary themes and technical innovations.
PREREQUISITE: ARH 131, 132 OR PERMISSION OF INSTRUCTOR.

ARH347 Special Topics in Art History
3 credits
PREREQUISITE: 3 CREDITS IN ART HISTORY

ARH348 Special Topics in Architectural Theory and History
3 credits
PREREQUISITE: 3 CREDITS IN ART HISTORY

ARH349 Special Topics in Art and the Law
3 credits
PREREQUISITE: 3 CREDITS OF ART HISTORY

ARH350 Miami Museums: History, Theory, and Practice
3 credits
PREREQUISITE: 3 CREDITS OF ART HISTORY

ARH405 SPECIAL TOPICS IN MEDIEVAL ART
3 credits
Changing topics in Medieval Art.
PREREQUISITE: 3 CREDITS IN ART HISTORY

ARH407 Special Topics: Renaissance and Baroque Art
3 credits
Changing topics in Renaissance and Baroque art.
PREREQUISITE: 6 CREDITS IN ART HISTORY

ARH408 SPECIAL TOPICS IN MODERN ART
3 credits
Changing topics in Modern Art.
PREREQUISITE: 3 CREDITS IN ART HISTORY

ARH409 Special Topics in Contemporary Art
3 credits
Changing topics in contemporary art.
PREREQUISITE: 6 CREDITS IN ART HISTORY.
ARH411 Special Topics: Museum Studies  
3 credits  Offered By Announcement Only  
Changing topics in museum studies.  
PREREQUISITE: 6 CREDITS IN ART HISTORY.

ARH440 Seventeenth-century Dutch Art  
3 credits  Fall Semester  
Art and artists of the 17th Century Dutch Republic, including Rembrandt and Vermeer.  
PREREQUISITE: ARH 132.

ARH445 REMBRANDT VAN RIJN  
3 credits  Offered By Announcement Only  
Seventeenth-century Dutch Artist Rembrandt Van Rijn's life and work.  
PREREQUISITE: 6 CREDITS IN ART HISTORY

ARH499 Honors Thesis  
3-6 credits  Fall & Spring Semester  
Directed reading and a substantial and scholarly paper.  
PREREQUISITE: SENIOR STANDING AND ACCEPTANCE IN DEPARTMENTAL HONORS PROGRAM.

ARH505 Problems in Art History  
3 credits  Fall & Spring Semester  
A means by which the student of advanced standing may investigate areas of a specialized nature, or those which are not offered as a regular part of the curriculum. Course content will be decided in joint conference between student and instructor.  
PREREQUISITE: ANY 300-LEVEL OR 400-LEVEL COURSE IN ART HISTORY AND PERMISSION OF INSTRUCTOR.

ARH506 Problems in Art History  
3 credits  Fall & Spring Semester  
A means by which the student of advanced standing may investigate areas of a specialized nature, or those which are not offered as a regular part of the curriculum. Course content will be decided in joint conference between student and instructor.  
PREREQUISITE: ANY 300-LEVEL OR 400-LEVEL COURSE IN ART HISTORY AND PERMISSION OF INSTRUCTOR.

ARH507 Museum Studies Seminar  
3 credits  Offered By Announcement Only  
Administrative functions of local art museums; researching selected art works in their permanent collections.  
PREREQUISITE: 6 CREDITS IN HISTORY

ARH508 Museum Exhibition  
3 credits  Offered By Announcement Only  
Organizing an art museum exhibition, and participating in the installation. Writing and composing the catalogue.  
PREREQUISITE: 6 CREDITS OF ART HISTORY

ARH509 Museum Internship  
1-3 credits  Fall & Spring Semester  
UM sponsored internship with Miami-area museum.  
PREREQUISITE: BY PERMISSION OF HEAD OF ART HISTORY.
ARH510 Arts Administration Internship
1-3 credits Fall & Spring Semester
UM sponsored internship with Miami-area arts institution.
PREREQUISITE: BY PERMISSION OF HEAD OF ART HISTORY.

ARH511 ARTLAB @ THE LOWE
3 credits Spring Semester
Organizing an art exhibition at the Lowe Art Museum. Taught by a different faculty member each year.
PREREQUISITE: 9 CREDITS IN ART HISTORY, GRADUATE STANDING, OR BY PERMISSION OF INSTRUCTOR.

ARH530 Seminar in Art History
3 credits Offered By Announcement Only
Special topics in western and nonwestern art. Semester's topic will be announced.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

ARH540 Seminar in The History of Museums and Collecting
3 credits Offered By Announcement Only
History of museums and collecting practices in western Europe and the United States from the sixteenth to the twentieth century.
PREREQUISITE: 9 CREDITS IN ART HISTORY, GRADUATE STANDING, OR BY PERMISSION OF INSTRUCTOR.

ARH550 Seminar in Theory and Methodology in the History of Art
3 credits Offered By Announcement Only
Basic methodologies that inform the discipline of art history and an introduction to the key authors and ideas that have shaped and continue to shape how critics and art historians write about art.
PREREQUISITE: 9 CREDITS IN ART HISTORY, GRADUATE STANDING OR BY PERMISSION OF INSTRUCTOR.

ARH560 Seminar in Nineteenth and Twentieth Century Art
3 credits Offered By Announcement Only
Special topics including museum practices and theory, women's art and contemporary issues.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

ARH570 Seminar in Non-European Art
3 credits Offered By Announcement Only
Special Topics in African, Oriental, Oceanic, Native North or South American art traditions.
PREREQUISITE: ARH 133, 134, OR PERMISSION OF INSTRUCTOR.

ARH598 Seminar in Contemporary American Art
3 credits Fall Semester
Issues in Art since 1960: Aesthetic theories and ideological issues generated in contemporary art as expressed in the writing of artists and art critics.
PREREQUISITE: ARH 344. UNDERGRADUATES MUST HAVE PERMISSION OF INSTRUCTOR.
BMB145 Introduction to Biochemistry & Molecular Biology Research
2 credits                                      Fall & Spring Semester
PREREQUISITE: PERMISSION OF INSTRUCTOR

BMB151 Freshman Seminar
1 credit                                        Spring Semester
Basic Biochemistry and Molecular Biology information is presented to the students as background material to new information that is collected from weekly news stories on the web by the instructor and the students. Students write a brief paper on a topic that they select and prepare a Power Point presentation on that topic.
PREREQUISITE: BIOCHEMISTRY MAJORS ONLY OR PERMISSION OF INSTRUCTOR

BMB245 Introduction to Biochemistry and Molecular Biology or Nutrition Research
1- 3 credits                                  Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: BMB 245 (IN THE FIELD, REQUIRES PERMISSION OF THE INSTRUCTOR TO REGISTER, BUT NOT LIMITED TO ONLY ONE STUDENT).

BMB251 Sophomore Seminar
1 credit                                       Spring Semester
Basic Biochemistry and Molecular Biology information is presented to the students as background material to new information that is collected from weekly news stories on the web, especially background information from weekly science journals, by the instructor and the students. Students write a brief paper on a topic that they select and prepare a Power Point presentation.
PREREQUISITE: THIS COURSE IS OPEN TO BIOCHEMISTRY MAJORS ONLY OR PERMISSION OF INSTRUCTOR

BMB258 Introduction to Biochemistry and Molecular Biology
3 credits                                      Spring Semester
The composition and functioning of a typical cell are described in chemical terms, leading to an understanding of how life processes such as metabolism, DNA replication and protein synthesis occur and are regulated at the level of individual molecules and reactions. Applications of biochemistry and molecular biology are discussed.
PREREQUISITE: CHM 112

BMB260 Introduction to Biochemistry and Nutrition
0- 3 credits                                  Spring Semester
The composition of food and the composition and functioning of a typical cell are described in chemical terms, leading to an understanding of how life processes such as digestion, and metabolism occur and are regulated at the level of individual molecule and reactions. Applications of biochemistry and nutrition are discussed.
PREREQUISITE: CHM 112, BUT CHM 201 PREFERRED; NOT OPEN TO STUDENTS WITH CREDIT IN BMB 258

BMB401 Biochemistry for the Medical Sciences
0- 3 credits                                  Fall Semester
Basic areas of biochemistry are discussed including protein structure, enzymology, metabolism, and molecular genetics. Emphasis is placed on central concepts of mammalian biochemistry. This course is recommended for premedical preparation.
PREREQUISITE: A GRADE OF B- OR HIGHER IN CHM 202 IS A PREREQUISITE
BMB407 Proteins and Enzymes
3 credits
Spring Semester
Course analyzes folding and binding of proteins, kinetics, and mechanisms of enzyme action. Not open to students with credits in BMB 507.
PREREQUISITE: BMB 406 OR 506 OR PERMISSION OF INSTRUCTOR.

BMB501 Senior Seminars
1 credit
Fall & Spring Semester
Students attend seminars of their own choice by visitors. Faculty or graduate students on recent research topics in Biochemistry and Molecular Biology or any other discipline in the basic biomedical sciences. Students write short reports on these seminars and critically evaluate the presentations. This course can be taken more than once.
PREREQUISITE: BMB 506

BMB506 Principles of Biochemistry and Molecular Biology
0- 3 credits
Fall Semester
Protein structure and function, enzyme mechanism and kinetics, and metabolism, focusing on energy metabolism and central concepts of metabolic regulation and of molecular biology including nucleic acid structure, protein synthesis, and DNA replication. (Not open to students with credit in BMB 401 or 406; for undergraduate honors credit or graduate student not majoring in biochemistry.
PREREQUISITE: A GRADE OF B- OR HIGHER IN CHM 202 IS A PREREQUISITE

BMB507 Proteins and Enzymes
3 credits
Spring Semester
Course analyzes the folding and binding of proteins, kinetics and mechanisms of enzyme action. For honors undergraduates. Not open to students in BMB 407.
PREREQUISITE: BMB 406 OR 506 OR PERMISSION OF INSTRUCTOR; FOR UNDERGRADUATE HONORS CREDIT OR GRADUATE STUDENTS NOT MAJORING IN BIOCHEMISTRY.

BMB509 Molecular Biology of the Gene I
3 credits
Fall Semester
Biochemical processes involved in the propagation and expression of genetic information in both prokaryotes and eukaryotes. Basic cellular processes of DNA replication, repair, genetic recombination, RNA transcription and processing, protein synthesis, control of gene expression, cell differentiation, and recombinant DNA technology. Reading includes both textbook assignments and original research papers.
PREREQUISITE: BMB 506 OR PERMISSION OF INSTRUCTOR.

BMB511 Topics in Applied BCH and Molecular Biology
1- 3 credits
Fall & Spring Semester & First & Second Summer Session
Selected topics from the fields of applied and pure biochemistry and molecular biology taught as a tutorial. Permission from Dr. Richard Myers is required for this course.
PREREQUISITE: BMB 406 OR 506 AND PERMISSION OF INSTRUCTOR.

BMB545 Research Problems in Biochemistry and Molecular Biology
2- 3 credits
Fall & Spring Semester & First & Second Summer Session
Laboratory research problems in various fields of biochemistry, including literature search, experiment design, data gathering, and evaluation or results. Permission from Dr. Richard Myers is required for this course.
PREREQUISITE: BMB545 (IN THE FIELD, REQUIRES PERMISSION OF THE INSTRUCTOR TO REGISTER, BUT NOT LIMITED TO ONLY ONE STUDENT).
BIL101 Introductory Biological Science
3 credits  Fall & Spring Semester & First & Second Summer Session
An integrated presentation of important biological processes and principles. Designed as an introduction to life sciences for the non-major. Students with credit in BIL 150 may NOT take this course to fulfill the natural science requirement. Does not count toward the BIL major or minor.
PREREQUISITE: NOT FOR BIOLOGY MAJORS OR MINORS. STUDENTS WITH CREDIT IN BIL 150 MAY NOT TAKE THIS COURSE TO FULFILL THE NATURAL SCIENCE REQUIREMENT.

BIL102 Elementary Biotechnology
3 credits  Offered By Announcement Only
Major aspects of the biotechnology field for the non-science major. Food biotechnology, enzymes, environmental biotechnology, transgenic animals and plants, analytical biotechnology and more.

BIL103 Introduction to Ecology.
3 credits  Fall & Spring Semester
Overview of ecological and evolutionary principles; Relationships of organisms to living and non-living aspects of their environment; human impact on ecosystems. Not for credit in the biology major or minor.
PREREQUISITE: NOT FOR CREDIT IN THE BIOLOGY MAJOR OR MINOR.

BIL104 Genetics and Society
3 credits  Offered By Announcement Only
The impact of new knowledge in genetics and heredity on society, including a consideration of questions about the inheritance of I.Q. and behavior, racial differences, genetic screening, control of reproduction, genetic engineering, forensic applications.
PREREQUISITE: NOT FOR BIOLOGY MAJORS OR MINORS.

BIL105 Biology of Plants.
3 credits  Offered By Announcement Only
Survey of the evolution and diversity of the plant kingdom; economic and cultural, importance of plants to humans. Does not count toward the BIL major or minor.
PREREQUISITE: NOT FOR BIOLOGY MAJORS OR MINORS.

BIL106 Biology of Animals
3 credits  Offered By Announcement Only
Survey of the evolution and diversity of the animal kingdom and the relationship between humans and other animals. Does not count toward the BIL major or minor.
PREREQUISITE: NOT FOR BIOLOGY MAJORS OR MINORS.

BIL107 Introduction to Evolution
3 credits  Fall Semester
Hereditary variation and the mechanisms of evolutionary change. Processes of species formation and the origin of adaptations. The development of evolutionary thinking from classical to contemporary time, including social issues (e.g., social Darwinism, creationism). Does not count toward the BIL major or minor.
PREREQUISITE: NOT FOR BIOLOGY MAJORS OR MINORS.

BIL109 Human Biology
3 credits  Fall Semester
A survey of the anatomy and physiology of man and his relationship to some major biological problems. Lectures and demonstrations. Does not count toward the BIL major or minor.
PREREQUISITE: NOT FOR BIOLOGY MAJORS OR MINORS.
BIL113 General Biology Honors Seminar
1 credit
Fall Semester
Special topics in biology correlated with BIL 150.
PREREQUISITE: COREQUISITE: BIL 150.

BIL114 General Biology Honors Seminar
1 credit
Spring Semester
Special topics in biology correlated with BIL 160.
PREREQUISITE: COREQUISITE: BIL 160.

BIL149 First Year Information
1 credit
Fall Semester
First year seminar for incoming Biology majors. Facilitation and encouragement of development of critical thinking skills, proficiency in oral and written expression, and an ability to solve problems by integrating knowledge from different disciplines in Biology.

BIL150 General Biology
4 credits
Fall Semester & First Summer Session
Principles of biology at the cellular, genetic, organism, population, community and ecosystem levels of organization.

BIL151 General Biology Laboratory
1 credit
Fall Semester & First Summer Session
Laboratory exercises to accompany BIL 150.
PREREQUISITE: COREQUISITE: BIL 150.

BIL152 HHMI General Biology Laboratory
1 credit
Fall Semester
Laboratory exercises to accompany BIL 150. Students teams engage into inquiry-based laboratory research projects, each lasting six weeks, per semester.
PREREQUISITE: BIL 150

BIL160 Evolution and Biodiversity
4 credits
Spring Semester & Second Summer Session
Evolutionary processes from an organism perspective. Biosystematics, biogeography and a survey of the diversity of life, with emphasis on the morphological, ecological, and behavioral adaptations of selected representatives of the Domains of living organisms.

BIL161 Evolution and Biodiversity Laboratory
1 credit
Spring Semester & Second Summer Session
Laboratory exercises to accompany BIL 160.
PREREQUISITE: COREQUISITE: BIL 160.

BIL162 HHMI Evolution and Biodiversity Laboratory
1 credit
Spring Semester
Laboratory exercises to accompany BIL 160. Student teams engage in two inquiry-based laboratory research projects, each lasting six weeks, per semester.
PREREQUISITE: BIL 160
BIL210 Human Anatomy
4 credits
Fall Semester
Structural interrelationships of organ systems. Demonstrations, dissections, and discussions.
PREREQUISITE: ONE YEAR OF BIOLOGY FOR MAJORS WITH LABORATORY.

BIL215 Human Physiology
3 credits
Spring Semester
Function of major human systems.
PREREQUISITE: BIL 210 (HSC 210).

BIL216 Human Physiology Laboratory
2 credits
Spring Semester & Second Summer Session
Experiments illustrating the physiology of human organ systems.
PREREQUISITE: BIL 210 (HSC 210).

BIL220 Evolution and Disease
3 credits
Fall & Spring Semester
Evolutionary insights on the origins and emergence of diseases, drug resistance, and how diseases have shaped human evolution.
PREREQUISITE: ONE YEAR OF MAJORS' GENERAL BIOLOGY WITH LABORATORY

BIL221 Biology of Birds
4 credits
Offered By Announcement Only
General biology of birds, field identification, natural history and migrations of southern Florida species. Lecture, 2 hours; laboratory, 3 hours; 4 field trips, 6 hours each. Binoculars needed.
PREREQUISITE: ONE YEAR OF GENERAL BIOLOGY WITH LABORATORY.

BIL226 General Botany
3 credits
Offered By Announcement Only
Survey of the plant kingdom, including evolution, plant diversity, reproduction, structure, function and ecology.
PREREQUISITE: ONE YEAR OF BIOLOGY WITH LABORATORY OR PERMISSION OF INSTRUCTOR

BIL227 General Botany Laboratory
1 credit
Offered By Announcement Only
Laboratory exercises to accompany BIL 226.
PREREQUISITE: BIL 226

BIL228 Medical Botany
3 credits
Offered By Announcement Only
History of medical botany approaches to health by different cultures, separation and identification of secondary compounds and mechanisms of action. Molecular and physiological action of different secondary compounds in the treatment of common western ailments. In vivo identification of local medicinal plants.
PREREQUISITE: ONE YEAR OF BIOLOGY FOR MAJORS WITH LABORATORY

BIL230 Introduction to Marine Biology
3 credits
Fall Semester
PREREQUISITE: ONE YEAR OF BIOLOGY AND CHEMISTRY WITH LABORATORIES. COREQUISITE: BIL 231.
BIL231 Introduction to Marine Biology Laboratory
1 credit
Fall Semester
Experimental laboratory exploring ecology, physiology and behavior of marine organisms in southern Florida marine habitats. Exercises cover laboratory techniques in behavior, functional morphology, productivity, fisheries research, osmoregulation and community ecology.
PREREQUISITE: ONE YEAR OF BIOLOGY AND CHEMISTRY WITH LABORATORIES. COREQUISITE: BIL 230.

BIL232 Populations, Resources and the Environment
3 credits
Offered By Announcement Only
Populations and their interrelationships with the environment. Human demographics, and natural resource issues including compatible development and landscape changes.
PREREQUISITE: ONE YEAR OF GENERAL BIOLOGY WITH LABORATORY.

BIL236 Ecology Lab
1 credit
Fall & Spring Semester
Lab and field exercises in ecology. Some Saturday field trips required.
PREREQUISITE: PREREQUISITE OR COREQUISITE: BIL 235.

BIL241 Animal Behavior
3 credits
Fall & Spring Semester
Mechanistic and evolutionary aspects of animal behavior. A survey of systems that illustrate the control, development and function of behavior in a variety of animals.
PREREQUISITE: ONE YEAR OF GENERAL BIOLOGY WITH LABORATORY.

BIL242 Animal Behavior Laboratory
1 credit
Offered By Announcement Only
A lab/field course in basic behavioral concepts using a variety of organisms, both vertebrate and invertebrate, in aquatic and terrestrial environments.
PREREQUISITE: PREREQUISITE OR COREQUISITE: BIL 241.

BIL250 Genetics
3 credits
Fall & Spring Semester & First Summer Session
The nature, organization, replication, expression, and evolution of the genetic materials.

BIL251 Principles of Genetics Laboratory
1 credit
Fall & Spring Semester
Laboratory exercises in genetics.
PREREQUISITE: PREREQUISITE OR COREQUISITE: BIL 250.

BIL252 HON: Honors Laboratory in Genetics
2 credits
Spring Semester
Laboratory exercises in genetics.
PREREQUISITE: PREREQUISITE OR COREQUISITE: BIL 250.

BIL253 Honors Seminar in Genetics
1 credit
Spring Semester
Special topics in genetics correlated with BIL 250.
PREREQUISITE: BIL 250.
BIL255 Cellular and Molecular Biology
3 credits  Fall & Spring Semester & First & Second Summer Session
Structure, molecules, and functions of cells.
PREREQUISITE: ONE YEAR OF GENERAL BIOLOGY WITH LABORATORY.

BIL256 Cellular and Molecular Biology Laboratory
2 credits  Spring Semester
Laboratory exercises in cellular and organism physiology; involving current research techniques and applications.
PREREQUISITE: PREREQUISITE OR COREQUISITE: BIL 255.

BIL257 HON: Honors Seminar in Cell Biology
1 credit  Spring Semester
Special topics in cell and molecular biology correlated with BIL 255.
PREREQUISITE: PREREQUISITE OR COREQUISITE: BIL 255.

BIL258 Core Laboratory Techniques
2 credits  Offered By Announcement Only
Conceptual and applied "methods" course in modern analytical techniques. It will expose students to the Department of Biology's three best-developed core laboratory facilities for imaging, molecular biology, and element analysis.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BIL261 Comparative Vertebrate Anatomy
4 credits  Offered By Announcement Only
Anatomy, classification, function, distribution, and evolution of vertebrate animals and their relationships to the environment. Lecture, 2 hours; laboratory, 6 hours.
PREREQUISITE: ONE YEAR OF BIOLOGY WITH LABORATORY.

BIL265 Comparative Physiology
3 credits  Fall & Spring Semester
Animal and plant physiological processes such as homeostasis, energy budget, movement, sensation, and reproduction with emphasis on the organism level.
PREREQUISITE: BIL 250 OR BIL 255

BIL266 Comparative Physiology Laboratory
1 credit  Fall Semester
Experiments to illustrate basic plant and animal physiological processes.
PREREQUISITE: PREREQUISITE OR COREQUISITE: BIL 265.

BIL268 Neurobiology
3 credits  Offered By Announcement Only
Neurons, organization of the nervous system, electrical properties of neurons, neurotransmitters, receptors, synaptic transmission, sensory and motor system, and complex brain functions.
PREREQUISITE: ONE YEAR OF GENERAL BIOLOGY WITH LABORATORY.

BIL284 Special Laboratory Topics in Biology
1 credit  Offered By Announcement Only
topics relevant to the biological sciences, co-listed with other departments or programs.
PREREQUISITE: ONE YEAR OF BIOLOGY FOR MAJORS WITH LABORATORY
BIL285 Special Topics in Biology
3 credits Offered By Announcement Only
Topics relevant to the biological sciences, co-listed with other departments or programs.
PREREQUISITE: ONE YEAR OF BIOLOGY FOR MAJORS WITH LABORATORY

BIL286 Special Topics in Biology
4 credits Offered By Announcement Only
Topics relevant to the biological sciences, co-listed with other departments or programs.
PREREQUISITE: ONE YEAR OF BIOLOGY FOR MAJORS WITH LABORATORY

BIL299 Seminar in Research Problems
2 credits Fall & Spring Semester
Discussion of current research of the Biology Faculty.
PREREQUISITE: MINIMUM SOPHOMORE STANDING.

BIL310 Advanced Human Anatomy
4 credits Spring Semester
An in-depth exploration of the human body requiring extensive laboratory work, lectures, dissections, and field trips.
PREREQUISITE: BIL 210 (HSC 210) AND PERMISSION OF INSTRUCTOR.

BIL311 Biostatistics
3 credits Fall & Spring Semester
Descriptive and inferential univariate and bivariate statistics applied to biological data. Probability, probability distributions, data description and presentation, hypothesis testing, decision making and experimental design. (Not open to students with credit in MTH 224, PSY 204 or equivalent).
PREREQUISITE: MTH 105 OR 108 OR SCORES OF MATHEMATICS PLACEMENT TEST SUFFICIENT FOR ADMISSION TO A CALCULUS COURSE. 12 CREDITS IN BIOLOGY.

BIL312 Biostatistics Laboratory
1 credit Offered By Announcement Only
Computer laboratory exercises to complement Biostatistics.
PREREQUISITE: ONE YEAR OF BIOLOGY FOR MAJORS WITH LABORATORY.

BIL315 Marine Biota and Biogeochemical Cycles
3 credits Spring Semester
The distribution of dissolved and particulate materials in the sea is not uniform in time and space. This variability reflects the diverse sources, transformations, and sinks of chemical constituents in the sea. This course focuses on the role of marine organisms in marine biogeochemical cycling and the marine carbon cycle and its interaction with the terrestrial biosphere and atmosphere.
PREREQUISITE: MSC 320
BIL316 Global Primary Production

3 credits  Offered By Announcement Only
Photosynthesis supports the vast majority of life on planet earth. Although terrestrial and aquatic photoautotrophs share the same basic photosynthetic mechanism, it is clear that the physical environment and the fate of primary product on differ drastically on land and in the sea. This course reviews the magnitude and the processes that shape primary production in terrestrial, oceanic, and freshwater habitats. It includes the fate of primary production in the earth’s iomes, and the role of terrestrial and aquatic productivity in regulating, and responding to, variable climate.
PREREQUISITE: BIL 160

BIL321 Invertebrate Zoology

4 credits  Offered By Announcement Only
Biology of invertebrates, with emphasis on tropical and subtropical marine forms. Field work and combined lecture-laboratory sessions.
PREREQUISITE: ONE YEAR OF BIOLOGY WITH LABORATORY.

BIL324 The Biology of Fishes

3 credits  Offered By Announcement Only
Selected topics on the ecology and physiology of fishes. Lectures on reproduction, respiration, osmoregulation, sense systems, hormonal control.
PREREQUISITE: BIL 255 AND 265, AND PERMISSION OF INSTRUCTOR.

BIL325 Herpetology in the Galapagos

3 credits  Fall Semester
PREREQUISITE: BIL 250 OR PERMISSION OF INSTRUCTOR

BIL330 Ecology

3 credits  Fall & Spring Semester
Organisms in relation to their environment.
PREREQUISITE: BIL 250: CALCULUS STRONGLY RECOMMENDED

BIL331 Ecology Laboratory

1 credit  Fall & Spring Semester
General basis of vertebrate taxonomy. Behavior, natural history, physiological ecology, adaptive morphology and zoogeography of the vertebrates. Lecture, 3 hours; laboratory, 3 hours; field trips.
PREREQUISITE: BIL 330

BIL332 Ecology and Land Use in the Galapagos

3 credits  Fall Semester
Principles and concepts of wildlife conservation and management.
PREREQUISITE: BIL 250 OR PERMISSION OF INSTRUCTOR

BIL335 Tropical Field Biology

3 credits  Spring Semester
Intensive field study conducted during semester breaks or recesses with additional pre-trip lectures. Requires payment of trip costs.
PREREQUISITE: ONE YEAR OF GENERAL BIOLOGY WITH LABORATORY AND PERMISSION OF INSTRUCTOR

BIL336 Tropical Plant Biology

3 credits  Spring Semester
Structure, diversity, ecology, development and physiology of major plant groups of the tropics. Lecture, 3 hours; field trips.
PREREQUISITE: ONE YEAR OF GENERAL BIOLOGY WITH LABORATORY.
BIL350 Survey of Marine Mammals  
3 credits
Offered By Announcement Only
The evolution and ecology of the cetaceans, pinnipeds, manatees, and allies: Natural history, zoogeography, physiology, husbandry, and biomedical aspects.
PREREQUISITE: BIL 150, MSC 230

BIL352 Techniques in Scanning Electron Microscopy  
3 credits
Spring Semester
Tissue preparation, use of the scanning electron microscope, photography, and analysis and manipulation of digital images. Lecture 1 hour; laboratory 5 hours.
PREREQUISITE: TWELVE CREDITS IN BIOLOGY, INCLUDING ONE YEAR OF GENERAL BIOLOGY WITH LABORATORY AND PERMISSION OF INSTRUCTOR.

BIL353 Projects in Scanning Electron Microscopy  
2 credits
Fall Semester
Individual research projects in scanning electron microscopy. Six hours of laboratory.
PREREQUISITE: BIL 352 AND PERMISSION OF INSTRUCTOR.

BIL354 Advance Topics in Cell Biology  
3 credits
Fall Semester
Study of cell biology through comprehensive survey of relevant topics and in-depth discussion on important recent works.
PREREQUISITE: BIL 255

BIL358 Mathematical Biology  
3 credits
Offered By Announcement Only
Biomathematics concerned with shape and form, random processes, dynamic phenomena, and chaos in complex systems.
PREREQUISITE: ONE YEAR OF GENERAL BIOLOGY WITH LABORATORY; MTH 112 OR 132.

BIL360 Comparative Physiology  
3 credits
Fall & Spring Semester
Animal and plant physiological processes such homeostasis, energy budget, movement, sensation, and reproduction with emphasis on the organism level.
PREREQUISITE: BIL 255

BIL363 Environmental Physiology  
3 credits
Offered By Announcement Only
Functional and adaptive significance of morphological and physiological traits of organisms in relation to their physical environment.
PREREQUISITE: BIL 265.

BIL365 Endocrinology  
3 credits
Offered By Announcement Only
The endocrine glands and the chemistry, mechanisms of action, and physiological effects of hormones. Emphasis on vertebrate hormones, including clinical aspects of human endocrinology. Lecture, 3 hours.
PREREQUISITE: ONE YEAR OF BIOLOGY AND CHEMISTRY WITH LABORATORY.

BIL366 Comparative Vertebrate Physiology  
3 credits
Offered By Announcement Only
Homeostasis interactions with the external environment, and special topics in physiology including life without oxygen, behavioral energetics, allometry.
PREREQUISITE: BIL 265 OR PERMISSION OF THE INSTRUCTOR.
BIL367 A Survey of Cancer Biology
3 credits Offered By Announcement Only
The biological aspect of human cancers, including their incidence, diagnosis and treatment.
PREREQUISITE: BIL 255.

BIL369 Fundamentals of the Biology of Aging
3 credits Offered By Announcement Only
How and why we age. The biology of aging at the molecular, cellular, and organism levels is presented in a comparative and evolutionary context.
PREREQUISITE: BIL 250, 255 OR 265.

BIL371 Readings in Biology
1 credit Spring Semester
Independent readings on selected topics in biology under the supervision of individual faculty.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BIL372 Readings in Biology
1 credit Fall & Spring Semester
Independent readings on selected topics in biology under the supervision of individual faculty.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BIL374 Seminar in Biology
1 credit Fall & Spring Semester
Seminar on selected topics in biology.
PREREQUISITE: ONE YEAR OF BIOLOGY FOR MAJORS WITH LABORATORY.

BIL375 Seminar in Biology
1 credit Fall & Spring Semester
Seminar on selected topics in biology.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BIL381 Workshop Leaders in Biology I
0-1 credits Fall Semester
Students engage in Peer-led Team Teaching of workshops for groups of BIL 150 students. May be taken once only for credit in the BIL major, but may be taken additional times for a general education credit. Students may serve as workshop leaders for a second time for a stipend if they (1) have taken the course once before and (2) are graduating seniors.
PREREQUISITE: A GRADE OF "A" OR "B" IN BIL 150, 151, 160, AND 161, OR EQUIVALENT OR AP OUTPLACING; PERMISSION OF INSTRUCTOR.

BIL382 Workshop Leaders in Biology II
0-1 credits Spring Semester
Students engage in Peer-led Team Teaching of workshops for groups of BIL 150 students. May be taken once only for credit in the BIL major, but may be taken additional times for general education credit. Students may serve as workshop leaders for a second time for a stipend if they 1) have taken the course once before and (2) are graduating seniors.
PREREQUISITE: A GRADE OF "A" OR "B" IN BIL 150, 151, 160, 161 OR EQUIVALENT OR AP OUTPLACING; PERMISSION OF INSTRUCTOR.
BIL384 Special Laboratory Topics in Biology
1-3 credits
Offered By Announcement Only
Topics relevant to the biological sciences, listed as subtitle. May be co-listed with other departments or programs.
PREREQUISITE: ONE YEAR OF BIOLOGY FOR MAJORS WITH LABORATORY

BIL385 Special Topics in Biology
2-6 credits
Offered By Announcement Only
Topics relevant to the biological sciences, listed as subtitle. May be co-listed with other departments or programs.
PREREQUISITE: ONE YEAR OF BIOLOGY FOR MAJORS WITH LABORATORY

BIL388 Investigations at the Art-Science Divide
3 credits
Offered By Announcement Only
PREREQUISITE: PHI 241

BIL403 Neuroscience Laboratory
4 credits
Spring Semester
Research methods and laboratory experiments in contemporary neuroscience from individual cells to behavior. Scientific report writing and computer applications in experimental design and analysis. Lecture/Lab.
PREREQUISITE: PSY 316 WITH PSY 402 OR BIL 268 AS PRE- OR COREQUISITE

BIL415 Coral Reef Science and Management
3 credits
Offered By Announcement Only
Coral reefs as biophysical and socioeconomic systems. Coral reef typology, geomorphology; biotic and abiotic components of coral reef ecosystems.
PREREQUISITE: BIL 150 AND 160 OR EQUIVALENT.

BIL424 Reef Fish Identification and Survey Techniques
2 credits
Offered By Announcement Only
Basic ecology of reef fishes, field identification of tropical Atlantic coral reef fishes, analyses of fish survey data, and use of statistics software packages to detect differences in fish assemblages.
PREREQUISITE: ONE YEAR OF BIOLOGY FOR MAJORS WITH LABORATORY; MTH 111/112; MSC 230; AND STATISTICS (PSY 204, BIL 311, OR EQUIVALENT).

BIL432 Ecology in the Galapagos
3 credits
Fall Semester
Ecological effects of contamination on populations, communities, and ecosystems and strategies for prevention and/or control measures.
PREREQUISITE: BIL 332 OR PERMISSION OF INSTRUCTOR

BIL433 Conservation in Practice
3 credits
Fall Semester
PREREQUISITE: BIL 432 OR PERMISSION OF INSTRUCTOR
BIL435 Origins, Ecology and Conservation of Insular Diversity
3 credits  Fall Semester & Second Summer Session
Three-week field course in the Solomon Islands. Ecological and evolutionary processes that maintain and create biological diversity in tropical islands. Nature selection, island biogeography, phylogenetics, community assembly, predator-prey interactions, sexual reproduction, mating systems, and social behavior. On-site field surveys and experiments. Fulfills lab/field requirement for the B.S. in Biology.
PREREQUISITE: ONE UPPER LEVEL COURSE IN ECOLOGY (E.G. BIL 330) OR EVOLUTION (E.G. BIL 220)

BIL445 Behavioral Endocrinology
3 credits  Fall Semester
PREREQUISITE: BIL 365 OR PERMISSION OF INSTRUCTOR

BIL451 Ethics and Genetics
3 credits  Offered By Announcement Only
PREREQUISITE: BIL 250

BIL455 Developmental Biology
3 credits  Fall Semester
PREREQUISITE: BIL 250 AND BIL 255

BIL466 Environmental Physiology: Oxygen, Water and Ionoregulatory Stress
3 credits  Fall Semester
Laboratory course that combines and elaborates on concepts learned in BIL 265 Topics will include homeostasis, interactions with the external environment, and life with limited oxygen and water. Lectures will be highly discussion-based; students will be expected to read primary research articles as suggested by the professor before lecture to foster participation in those discussions and form hypotheses about accompanying laboratory. Each lab will be written up as a formal laboratory report.
PREREQUISITE: BIL 265 AND PERMISSION OF INSTRUCTOR  CO-REQUISITE: BIL 265

BIL471 Special Studies in Biology
2-4 credits  Offered By Announcement Only
Content of course will vary by semester. Content in any semester will be expressed in parentheses, following title "Special Studies" in the printed class schedule.
PREREQUISITE: PERMISSION OF INSTRUCTOR

BIL481 Undergraduate Teaching Assistant Training in Biology
1-3 credits  Fall & Spring Semester
Training and teaching assistance for undergraduate workshops or laboratories, under the direct supervision of faculty. Specific topic is indicated by course subtitle. This course may be taken no more than twice for credit in the Biology major or minor, and if taken twice, teaching assistance must be for two different BIL courses. May be taken multiple times for general elective credit only.
PREREQUISITE: MINIMUM GRADE OF "B" IN THE COURSE IN WHICH STUDENT IS TO ASSIST.
PREMISSION OF INSTRUCTOR

BIL482 PRISM Teaching Fellow
2 credits  Fall & Spring Semester
Undergraduate mentors to PRISM students, and teaching fellows to PRISM course instructors in biology.
PREREQUISITE: PERMISSION OF INSTRUCTOR
BIL484 Special Laboratory Topics in Biology
1 credit                                               Offered By Announcement Only
Topics relevant to the biological sciences, co-listed with other departments or programs.
PREREQUISITE: ONE YEAR OF BIOLOGY FOR MAJORS WITH LABORATORY

BIL485 Special Topics in Biology
2-6 credits                                                 Fall & Spring Semester
Topics relevant to the biological sciences, listed as subtitle. May be co-listed with other departments or programs.
PREREQUISITE: PERMISSION OF INSTRUCTOR

BIL491 Departmental Seminar in Biology
1 credit                                                              Fall Semester
Research seminars by distinguished biologists.
PREREQUISITE: 24 CREDITS IN BIOLOGY.

BIL492 Departmental Seminar in Biology
1 credit                                                            Spring Semester
Research seminars by distinguished biologists.
PREREQUISITE: 24 CREDITS IN BIOLOGY.

BIL495 Projects in Biology
2 credits                                                    Fall & Spring Semester
Individual, original laboratory or field research supervised by a member of the department faculty and concluded by a formal written report.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BIL496 Projects in Biology
2 credits                                                    Fall & Spring Semester
Individual, original laboratory or field research supervised by a member of the department faculty and concluded by a formal written report.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BIL497 Projects in Biology
2 credits                                                    Fall & Spring Semester
Individual, original laboratory or field research supervised by a member of the department faculty and concluded by a formal written report.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BIL498 Senior Thesis
2 credits                                                    Fall & Spring Semester
Formal thesis preparation supervised by a member of the departmental faculty including a public oral defense and submission of the written document to the department.
PREREQUISITE: PREREQUISITE OR COREQUISITE: FOUR (4) CREDITS OF "PROJECTS IN BIOLOGY" OR EQUIVALENT.

BIL499 Research Colloquium
1 credit                                                     Fall & Spring Semester
Discussion of current research of Biology undergraduate students.
PREREQUISITE: BIL 495, JUNIOR OR SENIOR STANDING, AND PERMISSION OF THE DEPARTMENTAL HONORS DIRECTOR. COREQUISITE: BIL 496 OR 497.
BIL511 Biometry
3 credits
Descriptive and analytical statistics as used in biology. Emphasizes sampling, presentation of quantitative data, probability theory applications, distributions, parametric and non-parametric test procedures.
PREREQUISITE: ONE SEMESTER OF STATISTICS AND ONE YEAR OF CALCULUS.

BIL520 Evolution
3 credits
Evolutionary mechanisms and pathways: sources of hereditary variation, evolutionary forces, origins of adaptations, speciation, macroevolution, origin of life and humankind.
PREREQUISITE: BIL 250.

BIL521 Systematics
3 credits
Concepts and methods in phylogenetic systematics. Lectures, discussions, and computer labs, 3 hours.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BIL523 Advanced Biology of Marine Invertebrates
4 credits
Detailed study of major phyla of marine invertebrates. Special emphasis on taxa found in waters off southern Florida. Field course. Lectures, laboratory, special projects, and seminars.
PREREQUISITE: BIL 235 AND 321.

BIL525 Advanced Herpetology
3 credits
Systematics, biogeography, and evolutionary biology of amphibians and reptiles, with emphasis on modern families. Lecture, 2 hours; laboratory, 3 hours.
PREREQUISITE: BIL 250: BIL 360 STRONGLY RECOMMENDED

BIL526 Studies in the Biology of Mycorrhizae
2 credits
Readings, discussions and laboratory exercises concerning the biology of mutualistic root-inhabiting fungi and their plant hosts. Topics will vary by semester, may be repeated for credit.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BIL527 Biology of Fungi
5 credits
Physiology and ecology of the major groups of fungi, especially those of importance as pathogens or mutualists. Combined lecture and laboratory.
PREREQUISITE: BIL 250. BIL 360 STRONGLY RECOMMENDED

BIL531 Advanced Field Ecology
5 credits
Principles of and practical experience in quantitative sampling of community structure, plant and animal populations, and animal activities. Emphasis on individual projects. Lecture, 3 hours; laboratory and field, 10 hours alternate Saturdays plus projects.
PREREQUISITE: ONE SEMESTER OF ECOLOGY AND BIL 511 OR ANOTHER STATISTICS COURSE.
BIL532 Stable Isotope Ecology
3 credits
Offered By Announcement Only
Stable isotope analysis applied to ecological questions such as nutrient cycling, photosynthesis and trophic level studies.
PREREQUISITE: BIL 235 OR PERMISSION OF INSTRUCTOR

BIL535 Molecular Ecology
3 credits
Offered By Announcement Only
Molecular markers and analyses, and their applications to different problems in biology. Appropriate sampling, methods for assessing genetic diversity and differentiation. Approaches to studying gene flow, tools for behavioral ecology, remote sampling, tracking individuals, and paternity analysis, hybridization and speciation, DNA barcodes, and gene expression from a population biological perspective.
PREREQUISITE: BIL 250

BIL536 Molecular Ecology Laboratory
1 credit
Offered By Announcement Only
Laboratory techniques, molecular tools, applications, and analysis methods commonly used by researchers in the areas of molecular ecology and population genetics.
PREREQUISITE: BIL 535

BIL537 Ecosystem Ecology
3 credits
Offered By Announcement Only
Concepts and models of energy and nutrient flow, food webs, successional processes, human influences and effects of spatial heterogeneity.
PREREQUISITE: BIL 235 OR PERMISSION OF INSTRUCTOR

BIL539 Wildlife Resource Philosophy and Policy
3 credits
Offered By Announcement Only
Attitudes, philosophy, and policies that govern management of wildlife resources worldwide. Methods to influence public support for implementation of sound wildlife resource management.
PREREQUISITE: BIL 332

BIL540 Ethology and Behavioral Ecology
3 credits
Offered By Announcement Only
Evolutionary and comparative approach to concepts in animal behavior emphasizing function and mechanism. Topics include genetics of behavior, orientation, foraging, communication, and social behavior.
PREREQUISITE: BIL 235 AND EITHER BIL 241 OR 341 OR PERMISSION OF INSTRUCTOR

BIL548 Bioinformatics Algorithms
3 credits
Offered By Announcement Only
PREREQUISITE: (CSC120 OR CSC210) AND (BIL150 OR BIL104 OR BIL352 OR BIL552)
BIL552 Bioinformatics Tools
3 credits
Offered By Announcement Only
Databases and tools of bioinformatics as relevant to research in genomics and molecular biology. Bioinformatics applications. Information retrieval, analytical tools, BLAST searches, promoter analysis, protein structure-function analysis and various applications.
PREREQUISITE: BIL 250 OR BIL 150 AND PERMISSION OF INSTRUCTOR.

BIL553 Concepts in Cell Biology
3 credits
Fall Semester
A comprehensive and updated view of biology based on the Cell Theory through infusion of new genetics, pan-genomics, proteomics, photonics, bioinformatics and molecular engineering.
PREREQUISITE: BIL 255 OR GRADUATE STANDING

BIL554 Electron Microscopy
4 credits
Fall Semester
Techniques in transmission electron microscopy including tissue preparation, use of the electron microscope, photography, and interpretation of micrographs. Lecture, 1 hour; laboratory, 6 hours.
PREREQUISITE: BIL 255 OR 361 AND PERMISSION OF INSTRUCTOR.

BIL555 Projects in Electron Microscopy
2 credits
Spring Semester
Individual research projects in transmission electron microscopy, 6 hours.
PREREQUISITE: BIL 554. PERMISSION OF INSTRUCTOR.

BIL556 Ecological and Evolutionary Genomics
3 credits
Offered By Announcement Only
PREREQUISITE: BIL 250, BIL 255 OR PERMISSION FROM INSTRUCTOR

BIL557 Evolution and Development
3 credits
Offered By Announcement Only
PREREQUISITE: BIL 250 AND BIL 255

BIL564 Advanced Developmental Biology
3 credits
Offered By Announcement Only
Comprehensive survey of the principles of development and methods of experimental analysis. Lecture, discussion and demonstration, 3 hours.
PREREQUISITE: BIL 364.

BIL565 Evolution and Development
3 credits
Offered By Announcement Only
The hypothesis and data relating to the biological basis of aging in invertebrates and vertebrates including humans. Prerequisite: Senior or graduate status in a biological science.
PREREQUISITE: BIL 250

BIL568 Evolution and development of Nervous Systems
3 credits
Offered By Announcement Only
Mechanisms/pathways/modules underlying formation of the nervous system during development. How some properties of nervous systems have resisted change while others have diverged dramatically during evolution.
PREREQUISITE: BIL 268 OR BIL 355 OR PERMISSION OF INSTRUCTOR.
BIL569 Biology of Aging
3 credits
Offered By Announcement Only
The hypotheses and data relating to the biological basis of aging in invertebrates and vertebrates, including humans.
PREREQUISITE: SENIOR OR GRADUATE STATUS IN A BIOLOGICAL SCIENCE.

BIL571 Advanced Special Studies in Biology
1- 6 credits
Offered By Announcement Only
Content of course will vary by semester. Content in any semester will be indicated via subtitle in the class schedule.

BIL572 Advanced Special Studies in Biology
1- 6 credits
Offered By Announcement Only
Content of course will vary by semester. Content in any semester will be indicated via subtitle in the class schedule.

BIL573 Advanced Special Studies in Biology
1- 6 credits
Offered By Announcement Only
Content of course will vary by semester. Content in any semester will be indicated via subtitle in the class schedule.

BIL574 Advanced Special Studies in Biology
1- 6 credits
Offered By Announcement Only
Content of course will vary by semester. Content in any semester will be indicated via subtitle in the class schedule.

BIL575 Advanced Special Studies in Biology
1- 6 credits
Offered By Announcement Only
Content of course will vary by semester. Content in any semester will be indicated via subtitle in the class schedule.

BIL582 Borderless Science
3 credits
Offered By Announcement Only
Students from various scientific disciplines will be introduced to new technologies and resources from wide-ranging fields of science and learn to apply them in their own fields. Students will engage in mutual exchange of discipline-specific practices and novel ideas for research in biology, neuroscience, psychology, chemistry, physics, mathematics, engineering, etc.
PREREQUISITE: PERMISSION FROM INSTRUCTOR

BIL585 Advanced special topics in biology
3 credits
Offered By Announcement Only
Topics relevant to the biological sciences, co-listed with other departments or programs.
PREREQUISITE: SENIOR OR GRADUATE STUDENT STATUS

BIL586 Advanced Special Topics in Biology
4 credits
Offered By Announcement Only
Topics relevant to the biological sciences, co-listed with other departments or programs.
PREREQUISITE: SENIOR OR GRADUATE STUDENT STATUS

BIL590 Studies in Biology
1- 5 credits
Not Offered; Transfer Credit Only
Special topics taken at other institutions with no direct equivalents.
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Undergraduate Course Listing
COLLEGE OF ARTS AND SCIENCES
BIOLOGY

BIL591 Studies in Biology
1-5 credits Not Offered; Transfer Credit Only
Special topics taken at other institutions with no direct equivalents.

BIL592 Studies in Biology
1-5 credits Not Offered; Transfer Credit Only
Special topics taken at other institutions with no direct equivalents.

BIL593 Studies in Biology
1-5 credits Not Offered; Transfer Credit Only
Special topics taken at other institutions with no direct equivalents.

BIL594 Studies in Biology
1-5 credits Not Offered; Transfer Credit Only
Special topics taken at other institutions with no direct equivalents.

BIL595 Studies in Biology
1-5 credits Not Offered; Transfer Credit Only
Special topics taken at other institutions with no direct equivalents.

CHEMISTRY

CHM101 Fundamentals of Chemistry I
3 credits Fall Semester
Fundamental concepts of chemistry and their relation to living systems, utilitarian chemical processes, and the environment. Lecture, 3 hours. Not for major or minor credit.

CHM102 Fundamentals of Chemistry II
3 credits Offered By Announcement Only
A continuation of Chemistry 101.
PREREQUISITE: CHM 101 OR HIGH SCHOOL CHEMISTRY.

CHM103 Chemistry for Life Sciences I (Lecture)
3 credits Fall Semester
Essentials of inorganic chemistry as it apply to biological systems. Designed for (but not limited to) those planning health-related careers. Lecture, 3 hours.

CHM104 Chemistry for Life Sciences II (Lecture)
3 credits Spring Semester
A continuation of CHM 103, with emphasis on organic and biological chemistry, including biochemical processes and metabolism. Lecture, 3 hours.
PREREQUISITE: CHM 103.

CHM105 Chemistry for Life Sciences I (Laboratory)
1 credit Fall Semester
Designed for those students in CHM 103 requiring a laboratory course. Laboratory, 3 hours.
PREREQUISITE: PREREQUISITE OR COREQUISITE: CHM 103.

CHM106 Chemistry for Life Sciences II (Laboratory)
1 credit Spring Semester
Designed for those students in CHM 104 requiring a laboratory course. Laboratory, 3 hours.
PREREQUISITE: PREREQUISITE OR COREQUISITE: CHM 104.
COLLEGE OF ARTS AND SCIENCES

CHEMISTRY

CHM111 Principles of Chemistry I
0-3 credits  Fall & Spring Semester & First Summer Session
Fundamental principles of chemical science. The beginning course for science majors and premedical students. Lecture, 3 hours.
PREREQUISITE: PREREQUISITE OR COREQUISITE: MTH 105 OR 107.

CHM112 Principles of Chemistry II
0-3 credits  Fall & Spring Semester & Second Summer Session
Continuation of CHM 111. Lecture, 3 hours.
PREREQUISITE: CHM 111 OR 151.

CHM113 Chemistry Laboratory I
1 credit  Fall & Spring Semester & First Summer Session
Laboratory techniques of chemistry. To accompany CHM 111. Laboratory, 3 hours.
PREREQUISITE: PREREQUISITE OR COREQUISITE: CHM 111.

CHM114 Chemistry Laboratory II
1 credit  Fall & Spring Semester & Second Summer Session
Continuation of CHM 113. Intermediate laboratory techniques and quantitative analysis. To accompany CHM 112. Laboratory, 3 hours.
PREREQUISITE: CHM 113; PREREQUISITE OR COREQUISITE: CHM 112.

CHM151 Chemistry for Engineers I
0-3 credits  Fall & Spring Semester
Fundamental principles of chemistry for engineering students. Not recommended for students that plan to enter Medical School. Lecture, 3 hours.
PREREQUISITE: PREREQUISITE OR COREQUISITE: MTH 105 OR 107.

CHM153 Chemistry Laboratory for Engineers
1 credit  Fall & Spring Semester
An introductory laboratory course to accompany CHM 151. The techniques of chemistry for engineering students.
PREREQUISITE: PREREQUISITE OR COREQUISITE: CHM 151.

CHM201 Organic Chemistry I (Lecture)
3 credits  Fall & Spring Semester & First Summer Session
The chemistry of carbon compounds. Required of chemistry majors, and premedical students; recommended for majors in life sciences. Lecture, 3 hours.
PREREQUISITE: CHM 112.

CHM202 Organic Chemistry II (Lecture)
3 credits  Fall & Spring Semester & Second Summer Session
Continuation of CHM 201. Lecture, 3 hours.
PREREQUISITE: CHM 201.

CHM205 Organic Chemistry Laboratory I
1 credit  Fall & Spring Semester & First Summer Session
Introduction to techniques of organic chemistry. Laboratory, 3 hours.
PREREQUISITE: PREREQUISITE OR COREQUISITE: CHM 201.

CHM206 Organic Chemistry Laboratory II
1 credit  Fall & Spring Semester & Second Summer Session
Continuation of CHM 205. Laboratory, 3 hours.
CHM304 Structural Identification of Organic Compounds  
3 credits  Fall Semester  
The fundamental principles of ultraviolet/visible, infrared, nuclear magnetic resonance and mass spectrometry. How the combination of these sophisticated analytical techniques can be used to elucidate the structures of organic compounds.  
PREREQUISITE: CHM 202 AND 206.

CHM316 Instrumental Analytical Chemistry  
3 credits  Spring Semester  
Modern methods of quantitative analysis. Lecture, 3 hours.  
PREREQUISITE: CHM 304 AND 360.

CHM317 The Chemistry of Food and Taste.  
3 credits  Spring Semester  
The chemical compositions of the raw materials and end products, and an investigation and understanding of the changes that these undergo when exposed to human manipulations.  
PREREQUISITE: CHM 201 AND CHM 202

CHM320 Instrumental Methods in Chemistry and Biochemistry  
2 credits  Spring Semester  
Instrumental methods in modern chemistry and biochemistry, including spectrometric, electrochemical and chromatographic (separation) techniques. Laboratory, 8 hours.  
PREREQUISITE: CHM 304. COREQUISITE: CHM 316.

CHM331 Physical Chemistry for Premedical Students  
3 credits  Spring Semester  
Fundamentals of thermodynamics as applied to gases, liquids and solutions; chemical kinetics and other selected topics. Lecture, 3 hours.  
PREREQUISITE: CHM 112, MTH 110 OR 111 OR 131, PHY 102 OR PERMISSION OF INSTRUCTOR.

CHM360 Physical Chemistry I (Lecture)  
0-3 credits  Fall Semester  
Introduction to physical chemistry including thermodynamics, gaseous and liquid states, solutions, homogeneous and heterogeneous equilibriums. Lecture, 3 hours.  
PREREQUISITE: CHM 112, MTH 112 OR 132. PREREQUISITE OR COREQUISITE: ONE SEMESTER OF PHYSICS.

CHM364 Physical Chemistry (Laboratory I)  
1 credit  Fall & Spring Semester  
Representative experiments in physical chemistry. Laboratory, 4 hours.  
PREREQUISITE: PREREQUISITE OR COREQUISITE: CHM 331 OR 360.

CHM365 Physical Chemistry II (Lecture)  
3 credits  Spring Semester  
Chemical kinetics, introductory quantum chemistry, molecular spectroscopy.  
PREREQUISITE: CHM 360, MTH 112. PREREQUISITE OR COREQUISITE: TWO SEMESTERS OF PHYSICS.

CHM381 Workshop Leaders in Chemistry I  
1 credit  Fall & Spring Semester  
Students engaged in Peer-Led Team Teaching of workshops for groups of CHM 111 and/or CHM 112 students may enroll for this course. May be repeated.  
PREREQUISITE: A GRADE OF "A" OR "B" IN CHM 111 AND 112 OR AP OUTPLACING.
CHM382 Workshop Leaders in Chemistry II
1 credit Fall & Spring Semester
Students engaged in Peer-Led Team Teaching of workshops for groups of CHM 111 and/or CHM 112 students may enroll for this course. May be repeated.
PREREQUISITE: A GRADE OF "A" OR "B" IN CHM 111 AND 112 OR AP OUTPLACING.

CHM401 Environmental Chemistry
3 credits Spring Semester
Major environmental features of the earth; Role of natural and synthetic chemicals in the environment; Atmospheric and aquatic pollution; Application of acid-base theory and oxidation reduction to environmental problems.
PREREQUISITE: CHM 111 AND 112; AND JUNIOR STANDING; NOT OPEN TO STUDENTS WITH CREDITS IN ESC 401.

CHM442 Inorganic Chemistry (Laboratory)
1 credit Spring Semester
Synthesis of inorganic compounds and determination of their physical and chemical properties. CHM 541 is a co requisite for ACS chemistry majors. Laboratory, 3 hours.
PREREQUISITE: CHM 365 AND 541.

CHM464 Physical Chemistry (Laboratory II)
1 credit Spring Semester
Continuation of CHM 364. Laboratory, 4 hours.

CHM488 Undergraduate Research
1-3 credits Fall & Spring Semester & First & Second Summer Session
Laboratory research under the direction of a member of the chemistry faculty. Thesis optional. Course may be repeated for credit.
PREREQUISITE: B AVERAGE IN CHEMISTRY COURSES AND DEPARTMENTAL CONSENT.

CHM490 Honors Research
1-3 credits Fall & Spring Semester & First & Second Summer Session
Laboratory research under the direction of a member of the Chemistry faculty. Thesis required. Course may be repeated for credit.
PREREQUISITE: ADMISSION TO HONORS PROGRAM. CHEMISTRY DEPARTMENT CONSENT. CHM 206.

CHM510 Enzyme Kinetics and Mechanism
3 credits Fall & Spring Semester
Detailed coverage of chemistry of enzyme-catalyzed reactions.
PREREQUISITE: CHM 201 AND CHM 202

CHM515 Makings of a Scientist
3 credits Offered By Announcement Only
By analyzing achievements and advice of few successful scientists, chemists in particular will highlight what qualities are needed to be a successful scientist. Importance of motivation, perseverance, communication skills, adhering to ethical guidelines and ability to deal with colleagues and co-workers will be brought out. Career options available for a trained chemist and how different each one is will be pointed out. Overall this is a course in multi-mentoring of graduate students who are aiming for a career in science and hope to be successful researchers in science, particularly in chemistry.
PREREQUISITE: REGISTERED GRADUATE STUDENTS OR UNDERGRADUATES IN THEIR SENIOR YEAR
CHM520 Physical Organic Chemistry
3 credits Fall Semester
Aspects of chemical bonding, acids and bases, stereochemistry, aromaticity, pericyclic reactions, linear free energy relationships, transition state theory, excited state chemistry, reactive intermediaries, mechanisms of uni- and bimolecular reactions.
PREREQUISITE: CHM 202 AND 360.

CHM521 Polymer Chemistry
3 credits Offered By Announcement Only
Fundamental concepts in polymer chemistry. Course will cover the terminology and chemistry of polymers and polymerizations. Students will be required to synthesize several different types of polymers. This will reinforce concepts learned during lecture and give students hands-on experience.
PREREQUISITE: CHM 201 AND CHM 202

CHM522 Synthetic Organic Chemistry
3 credits Fall Semester
Functional group transformations, Synthon approach. Retrosynthetic analyses, multistep syntheses.

CHM523 Contemporary Total Synthesis
3 credits Spring Semester
New methods strategies and perspectives for the total synthesis based on the modern literature.
PREREQUISITE: CHM 201, CHM 202, AND CHM 522

CHM524 Supramolecular Chemistry
3 credits Offered By Announcement Only
Complexation, recognition, and catalysis as applied to bioorganic chemistry. Steric, polar, and lipophillic interactions as well as proximity effects in the design of synthetic enzyme mimics, cationic transport species, etc.
PREREQUISITE: CHM 365 AND 520.

CHM525 Structural Organic Chemistry
3 credits Spring Semester

CHM530 Fluorescence Spectroscopy and Microscopy
3 credits Fall & Spring Semester
The photo physical properties of organic compounds that illustrates the fundamental principles of fluorescence. It also explains how fluorescence spectra and images can be recorded and how these powerful analytical techniques can be used to address significant problems in biology and medicine.
PREREQUISITE: CHM 304 AND CHM 360
**CHM535 Molecular and Supramolecular Photochemistry**

3 credits

Offered By Announcement Only

Generation of a model that will help rationalize/predict excited state reactions.
A brief background on physical aspects of photochemistry will be given. Exploring
and understanding of reactions that are triggered by light. Importance of light
in life will be highlighted.

PREREQUISITE: CHM 201 AND CHM 202

**CHM541 Principles of Bonding and Reactivity in Inorganic Chemistry**

3 credits

Fall Semester

Bonding principles necessary to understand the structure, stability, and fundamental
reactivity of main group and transition metal inorganic compounds.

PREREQUISITE: CHM 365.

**CHM553 Modern Quantum Chemistry**

3 credits

Offered By Announcement Only

Many-electron wave functions and operators. Hartee-Fock approximation, density
functional theory, configuration interaction, and many-body perturbation theory.

PREREQUISITE: CHM 365

**CHM555 Modern Statistical Mechanics**

3 credits

Offered By Announcement Only

The statistical foundation of thermodynamics; ensemble averages and fluctuations;
partition functions for ideal and nonideal systems; Monte Carlo methods, classical
fluids, and no equilibrium statistical mechanics.

PREREQUISITE: ONE SEMESTER OF PHYSICS, MTH 112 OR 132, CHM 360, OR PERMISSION OF
INSTRUCTOR  COREQUISITE(S): CHM 365

**CHM556 Self-Assembly and Surface Chemistry**

3 credits

Offered By Announcement Only

Methods of preparation of self-assembly monolayers and surface chemistry properties.

PREREQUISITE: CHM 365.

**CHM563 Electronic Structure Methods**

3 credits

Fall Semester

Basis sets, post-SCF methods, and potential energy surfaces. Thermodynamic, structural,
and vibrational predictions, excited states, solvation and hybrid Hamiltonians.

PREREQUISITE: CHM 365

**CHM564 Molecular Simulations**

1 credit

Offered By Announcement Only

Classical dynamics, force-fields, sampling, periodic and stochastic boundaries,
Monte-Carlo and molecular dynamics simulations, and free energy perturbation.

PREREQUISITE: PERMISSION OF DEPARTMENT.

**CHM565 Principles of Spectroscopic Techniques**

3 credits

Offered By Announcement Only

Spectroscopic techniques: nuclear magnetic resonance (NMR), mass spectra (MS),
ultraviolet (UV), visible infrared (IR), fluorescence, and other specialized spectroscopic
techniques.

PREREQUISITE: CHM 365.

**CHM570 Advanced Physical Chemistry Topics**

3 credits

Offered By Announcement Only

PREREQUISITE: CHM 365.
CHM575 Principles of Nuclear Magnetic Resonance and Multidimensional Spectroscopy
3 credits
Offered By Announcement Only
Theory of nuclear magnetic resonance; Bloch equations; relaxation theory; time-domain versus frequency domain spectroscopies, and principles of multidimensional spectroscopy. PREREQUISITE: ONE SEMESTER OF PHYSICS, MTH 112 OR 132, CHM 304, OR PERMISSION OF INSTRUCTOR. COREQUISITE(S): CHM 360

CHM579 Special Topics: Chemistry Internship
1-3 credits
Offered By Announcement Only

CHM580 Special Topics: Chemistry Internship
1-3 credits
Offered By Announcement Only

CHM591 Topics in Chemistry
1-3 credits
Offered By Announcement Only
Subject matter offerings based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule following the title, "Topics in Chemistry". PREREQUISITE: 20 CREDITS IN CHEMISTRY.

CHM592 Topics in Chemistry
1-3 credits
Offered By Announcement Only
Subject matter offerings based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule following the title, "Topics in Chemistry." PREREQUISITE: 20 CREDITS IN CHEMISTRY.

CHM593 Readings in Chemistry
1-3 credits
Offered By Announcement Only
Supervised readings on special topics. Offered by special arrangement. May be repeated for credit. PREREQUISITE: 20 CREDITS IN CHEMISTRY AND PERMISSION OF THE DEPARTMENT CHAIRMAN.

CHM594 Readings in Chemistry
1-3 credits
Offered By Announcement Only
Supervised readings on special topics. Offered by special arrangement. May be repeated for credit. PREREQUISITE: 20 CREDITS IN CHEMISTRY AND PERMISSION OF THE DEPARTMENT CHAIRMAN.

CHINESE

CHI101 Elementary Chinese (Mandarin)
3 credits
Fall & Spring Semester
Conversation, grammar, reading, elementary composition.

CHI102 Elementary Chinese (Mandarin)
3 credits
Spring Semester
Continuation of CHI 101, conversation, grammar, reading, elementary composition. PREREQUISITE: CHI 101.

CHI201 Intermediate Chinese I
3 credits
Fall & Spring Semester
Expanding further on language skills (grammar, composition and reading) while introducing students to aspects of Chinese customs, history and culture. Closed to native speakers. PREREQUISITE: CHI 102. CLOSED TO NATIVE SPEAKERS
CHI202 Intermediate Chinese II
3 credits Spring Semester
To consolidate the foundation which students have built on CHI 101, 102, and 201, with emphasis on four language skills and cultural studies. Closed to native speakers.
PREREQUISITE: CHI 201, AND CLOSED TO NATIVE SPEAKERS.

CLASSICS
CLA220 Greek and Roman Mythology
3 credits Fall & Spring Semester & First & Second Summer Session
The major political, cultural, and social themes that appear in Greek and Roman mythology, examining literary and material evidence.

CLA221 Sports & Society in the Ancient World
3 credits Fall & Spring Semester
Sports in the civilizations of ancient Greece and Rome, making comparisons with modern American sports culture. Topics may include the origins of sports competitions in religious rituals; athletes and athletics in myth and legend; architectural remains such as the Colosseum and the stadium at Olympia; and modern recreations of ancient sports events in films such as Gladiator and Ben Hur.

CLA224 The Heroic Journey
3 credits Spring Semester
The figure of the Hero on a Journey has long captivated the minds of story-tellers and audiences. This motif, known as "The Monomyth," speaks the profoundest hopes and fears of humankind. This course will examine the Monomyth as it occurs particularly in the classical tradition from Gilgamesh to Tolkien.

CLA232 Topics in Ancient Law, Scandalous Trails from the Ancient Legal World
3 credits Fall & Spring Semester

CLA233 Ancient Medicine
3 credits Fall & Spring Semester

CLA241 Greek Civilization
3 credits Fall & Spring Semester
This course introduces key concepts, events, and personalities of Greek culture.

CLA242 Roman Civilization
3 credits Fall & Spring Semester
Introduces key concepts, events, and personalities of ancient Roman culture.

CLA246 Ancient Rhetorical Theory
3 credits Fall & Spring Semester & First & Second Summer Session

CLA301 Ancient Greece
3 credits Fall Semester
Greek civilization from the Late Bronze Age to the end of Greek independence at the battle of Chaeronea in 338 B.C.E.
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR.

CLA302 The Hellenistic Age
3 credits Spring Semester
Conquests of Alexander the Great and the spread of Greek culture in the Near East under Alexander's successors until the death of Cleopatra in 31 B.C.E.
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR.
CLA303 The Roman Republic  
3 credits  
Fall Semester  
Roman civilization from the establishment of the Republic until the Battle of Actium in 31 B.C.E.  
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR.

CLA304 The Roman Empire  
3 credits  
Spring Semester  
Roman civilization from the reign of Augustus in 37 B.C.E. to the Fall of Rome in 476 C.E.  
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR.

CLA310 Survey of Ancient Greek Literature and Culture  
3 credits  
Fall & Spring Semester & First & Second Summer Session  
Classical Greek culture, paying special attention to Greek literature from Homer to Aristotle. It is intended to lay a foundation for understanding how Hellenic thought and art influenced the development of all subsequent Western culture. All texts will be read in English translation.  
PREREQUISITE: THREE CREDITS IN LITERATURE.

CLA311 Survey of Classical Latin Literature and Culture  
3 credits  
Fall & Spring Semester & First & Second Summer Session  
A broad introduction (in English translation) to the literature of the Roman Republic and Empire. The Greek heritage behind Latin literature will be highlighted. Readings will be chosen from authors such as Catullus, Cicero, Vergil, Horace, Ovid, Petronius, Juvenal, Tacitus, and Suetonius, and from genres such as epic and lyric poetry, oratory, history and satire.

CLA315 The Classical Epic Tradition  
3 credits  
Offered By Announcement Only  
The course treats the rise and development of the Western epic tradition from Homer, Lucretius, and Vergil in the classical world, through Dante in the Middle Ages, Milton in the Renaissance, and Wordsworth and Eliot in modernity.  
PREREQUISITE: ENG 106 OR PERMISSION OF INSTRUCTOR.

CLA323 The Ancient World on Screen  
3 credits  
Fall & Spring Semester & First & Second Summer Session  

CLA325 Vampire in Folklore, Fiction, and Film  
3 credits  
Fall & Spring Semester & First & Second Summer Session  

CLA340 Greek Tragedy  
3 credits  
Fall & Spring Semester  
Readings in English of the tragedies of Aeschylus, Sophocles, and Euripides.  
PREREQUISITE: ENG 106 OR PERMISSION OF INSTRUCTOR.

CLA370 Self and Other in the Ancient World  
3 credits  
Fall & Spring Semester  
The course examines Greek and Roman depictions of outsiders in a wide range of ancient texts and material sources.  
PREREQUISITE: ENG 105 AND/OR 106 OR PERMISSION OF INSTRUCTOR.
CLA401 Special Topics in Classics
3 credits Fall & Spring Semester & First & Second Summer Session
This course will address a specific author, topic or text (appearing as a subtitle). Required readings will be in English. Analogous to REL 404-409 courses.

CLA402 Special Topics in Classics
3 credits Fall & Spring Semester & First & Second Summer Session
This course will address a specific author, topic or text (appearing as a subtitle). Required readings will be in English. Analogous to REL 404-409 courses.

CLA403 Special Topics in Classics
3 credits Fall & Spring Semester & First & Second Summer Session
This course will address a specific author, topic or text (appearing as a subtitle). Required readings will be in English. Analogous to REL 404-409 courses.

CLA404 Special Projects in Classics
3 credits Fall & Spring Semester & First & Second Summer Session
This course will address a specific project in Classics (appearing as a subtitle). Analogous to REL 407-409.

CLA405 Special Projects in Classics
3 credits Fall & Spring Semester & First & Second Summer Session
This course will address a specific project in Classics (appearing as a subtitle). Analogous to REL 407-409.

CLA406 Special Projects in Classics
3 credits Fall & Spring Semester & First & Second Summer Session
This course will address a specific project in Classics (appearing as a subtitle). Analogous to REL 407-409.

CLA422 Aristophanes
3 credits Fall & Spring Semester
PREREQUISITE: GRE 201

CLA491 DIRECTED READING IN CLASSICS
1- 3 credits Fall & Spring Semester & First & Second Summer Session
Content to be determined by faculty member and registering student(s).
PREREQUISITE: SIX CREDITS IN CLASSICS OR PERMISSION OF INSTRUCTOR

CLA492 Directed Reading in Classics
3 credits Fall & Spring Semester & First & Second Summer Session
This course will address a specific author, topic or text (appearing as a subtitle). Analogous to REL 401-403 courses and to (existing) CLA 491.
PREREQUISITE: PERMISSION OF INSTRUCTOR

CLA493 Directed Reading in Classics
3 credits Fall & Spring Semester & First & Second Summer Session
This course will address a specific author, topic or text (appearing as a subtitle). Analogous to REL 401-403 courses and to (existing) CLA 491.
PREREQUISITE: PERMISSION OF INSTRUCTOR

CLA495 Senior Thesis I
3 credits Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: SENIOR STANDING
CLA496 Senior Thesis II  
3 credits  
Fall & Spring Semester & First & Second Summer Session  
PREREQUISITE: SENIOR STANDING

CLA505 Seminar in Ancient Studies  
3 credits  
Fall & Spring Semester & First & Second Summer Session  
Topics in Greek and Roman studies.  
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR

COMPUTER SCIENCE

CSC115 Social and Ethical Issues in Computing  
3 credits  
Spring Semester  
History, social context and methods and tools of analysis. Professional and ethical responsibilities. Intellectual property. Privacy and civil liberties.  
PREREQUISITE: NO PREREQUISITES FOUND FOR THIS COURSE

CSC119 Computers and Society  
3 credits  
Spring Semester  

CSC120 Computer Programming I  
0- 4 credits  
Fall Semester  

CSC210 Computing for Scientists  
3 credits  
Fall & Spring Semester  
PREREQUISITE: MTH 161 AND 3 CREDITS IN SCIENCE

CSC220 Computer Programming II  
0- 4 credits  
Fall & Spring Semester  
PREREQUISITE: CSC 120.

CSC300 Android Programming  
3 credits  
Offered By Announcement Only  
Programming mobile devices in the Android framework.  
PREREQUISITE: “A” GRADE IN CSC 220. STUDENTS MUST BRING OWN LAPTOP.

CSC314 Computer Organization and Architecture  
3 credits  
Fall Semester  
PREREQUISITE: PREREQUISITE: CSC 120 OR CIS 324
CSC322 System Programming  
3 credits  
Spring Semester  
PREREQUISITE: CSC 220 OR CIS 324

CSC329 Introduction to Game Programming  
3 credits  
Spring Semester  
Fundamental programming issues in game design: Software design; Version control; Basic graphics; GUI programming. Large-scale game project: Team development of a functional game; Graphics and GUI component; Networking component; Core game engine.  
PREREQUISITE: CSC 220.

CSC401 Computer Science Practicum I  
1 credit  
Offered By Announcement Only  
Implementation of techniques, algorithms, and data structures being taught in a co requisite computer science course.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CSC402 Computer Science Practicum II  
1 credit  
Offered By Announcement Only  
Implementation of techniques, algorithms, and data structures being taught in a co requisite computer science course.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CSC403 Computer Science Practicum III  
1- 3 credits  
Offered By Announcement Only  
Implementation of techniques, algorithms, and data structures being taught in a co requisite computer science course.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CSC405 Computer Science Seminars  
1 credit  
Fall & Spring Semester  
PREREQUISITE: 12 CREDITS IN CSC COURSES

CSC410 Computer Science Project Planning  
1- 3 credits  
Offered By Announcement Only  
Planning for the implementation of a Computer Science project, including: Problem analysis, System architecture design, Algorithm and data structure selection, User interface design, Verification and validation plan, and Prototyping.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CSC411 Computer Science Project Implementation  
1- 3 credits  
Offered By Announcement Only  
Implementation of a Computer Science project, including: Hardware preparation, Component implementation, System integration, Verification and validation, and Documentation.  
PREREQUISITE: CSC 410 OR PERMISSION OF INSTRUCTOR.
CSC412 Computer Science Internship
1-3 credits
Offered By Announcement Only
A commercial computing environment. Normally 50 internship hours are required per credit earned (the host company must supply documentary evidence of hours worked).
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CSC481 Undergraduate Teaching Assistant Training in Computer Science
1-3 credits
Fall & Spring Semester
Training and teaching assistant for a specific course, in computer laboratories.
May be taken multiple times, assisting maximally twice for a given course.
PREREQUISITE: “A” GRADE IN THE COURSE IN WHICH STUDENT IS TO ASSIST, AND PERMISSION OF INSTRUCTOR.

CSC498 Senior Topics in Computer Science
3 credits
Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CSC506 Logic
3 credits
Offered By Announcement Only
PREREQUISITE: MTH 230 OR 309 OR PERMISSION OF THE INSTRUCTOR.

CSC507 Data Security and Cryptography
3 credits
Offered By Announcement Only
Access, information flow, and inference controls. Network security and management.
Encryption algorithms. Cryptographic techniques.
PREREQUISITE: (CSC 517 OR 527)

CSC517 Data Structures and Algorithm Analysis
3 credits
Fall & Spring Semester
Distributed algorithms. Cryptographic algorithms. Geometric algorithms.
PREREQUISITE: MTH 309, AND CSC 220.

CSC518 Interpreters and Compiler Theory
3 credits
Offered By Announcement Only
Translation of higher-level languages into machine language. Grammars, parsing, scanners, precedence relations. Run-time storage and symbol table organization.
PREREQUISITE: CSC 519.

CSC519 Program Languages
3 credits
Fall Semester
PREREQUISITE: CSC 517.
CSC521 Principles of Computer Operating Systems
3 credits  Fall Semester
Process management. Scheduling and dispatch. Interprocess communication. Memory
for UNIX.
PREREQUISITE: (CSC 314 OR 350), (CSC 322 OR PERMISSION OF INSTRUCTOR).

CSC523 Database Systems
3 credits  Fall Semester
Information models and systems. Database systems. Data modeling. Relational databases.
Relational database design. Database query languages. Database Mining concepts,
Web database programming.
PREREQUISITE: CSC 517.

CSC524 Computer Networks
3 credits  Spring Semester
Computer networks and network applications. The protocol stack. Routing, switching
and bridging technologies. Models of network computing. Internet standards and
protocols.
PREREQUISITE: (CSC 314 OR 350), (CSC 322 OR PERMISSION OF INSTRUCTOR).

CSC527 Theory of Computing
3 credits  Spring Semester
Sets, relations, and languages. Automata theory. Basic computability theory. Turing
machines. The complexity classes P and NP.
PREREQUISITE: CSC 220, MTH 309

CSC528 Introduction to Parallel Computing
3 credits  Offered By Announcement Only
Parallel computing systems shared-memory parallel programming, with open MP, distributed-memory
parallel programming, software with open MPI software package. Applications: vector
and matrix operations, sorting, image processing.
PREREQUISITE: CSC 517

CSC529 Introduction to Computer Graphics
3 credits  Offered By Announcement Only
Graphic systems. Graphic communication. Geometric modeling (2D and 3D representations).
PREREQUISITE: CSC 220, MTH 210

CSC531 Introduction to Software Engineering
3 credits  Spring Semester
Requirements and specifications. Design, validation, and evolution. Project management.
Tools and environments. Foundations of human-computer interaction. Risks and liabilities
of computer-based systems. Intellectual property.
PREREQUISITE: CSC 322 OR 517.

CSC540 Algorithm Design and Analysis
3 credits  Offered By Announcement Only
Design techniques include divide-and-conquer, greedy method, dynamic programming,
backtracking. Time and space complexity. Sorting, searching, combinatorial and
graph algorithms.
PREREQUISITE: CSC 517.
CSC545 Introduction to Artificial Intelligence
3 credits Offered By Announcement Only
PREREQUISITE: CSC 220 AND MTH 309.

CSC547 Computational Geometry
3 credits Offered By Announcement Only
Algorithms for solving geometric problems arising from application domains including graphics, robotics, and GIS.
PREREQUISITE: CSC 517

CSC548 Bioinformatics Algorithms
3 credits Fall Semester
PREREQUISITE: (CSC120 OR CSC210) AND (BIL150 OR BIL104 OR BIL352 OR BIL552 OR CSC 552)

CSC552 Bioinformatics Tools
3 credits Fall Semester
Databases and tools of bioinformatics, as relevant to research in genomics and molecular biology. Bioinformatics applications. Information retrieval, analytical tools, BLAST searches, promoter analysis, and protein structure-function analysis, and various applications.
PREREQUISITE: BIL 250 OR (BIL 150 AND PERMISSION OF INSTRUCTOR)

CSC555 Multimedia Systems
3 credits Offered By Announcement Only
PREREQUISITE: CSC 517.

CSC595 Topics in Computer Science
1- 3 credits Offered By Announcement Only

CSC596 Topics in Computer Science
1- 3 credits Offered By Announcement Only

CSC597 Topics in Computer Science
1- 3 credits Offered By Announcement Only

CSC598 Topics in Computer Science
1- 3 credits Offered By Announcement Only

CSC599 Topics in Computer Science
1- 3 credits Offered By Announcement Only

ECOSYSTEM SCIENCE & POLICY
ECS111 Introduction to the Earth’s Ecosystem
3 credits Fall & Spring Semester
Earth's ecosystem and the interactions of humans with it. Concepts in ecology, environmental science and policy. Two field trips. Team-taught.
ECS112 Field Problems in Ecosystem Science and Policy
2 credits Spring Semester
Problem solving in ecology and environmental management. Class projects and case studies providing experience in identifying problems, quantifying scientific issues and considering management options and outcomes. Extensive field experience.
PREREQUISITE: ECS 111 OR PERMISSION OF THE INSTRUCTOR

ECS113 Introduction to Environmental Policy
3 credits Fall Semester
Theories and case studies from various fields, including anthropology, economics, ethics, geography, political science and psychology, will be used to explore the multiple perspectives that influence group and individual perceptions of environmental issues.
PREREQUISITE: ECS 111

ECS201 Seminar Series in Contemporary Environmental Issues I
1 credit Fall Semester
Current environmental topics involving interaction of science and policy.

ECS202 Seminar Series in Contemporary Environmental Issues II
1 credit Spring Semester
Current environmental topics involving interaction of science and policy.

ECS204 Environmental Statistics
3 credits Fall & Spring Semester
An overview of parametric and nonparametric statistics with an emphasis on applications in the analysis of environmental data.
PREREQUISITE: MTH 103 OR HIGHER, PLUS SIX (6) CREDITS IN ECS.

ECS232 Ecological Principles and Environmental Applications
3 credits Fall Semester
PREREQUISITE: ECS 111

ECS272 Special Topics in Ecosystem Science and Policy
1-3 credits Offered By Announcement Only
Content varies by semester and is indicated in parentheses following course number and title in class schedule.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

ECS301 Tools for Environmental Decision-Making: The Quantitative Perspective
3 credits Fall Semester
Quantitative decision-making techniques and methodologies.
PREREQUISITE: ECS 111, 112.

ECS302 Perspectives on Environmental Decision Making
3 credits Fall & Spring Semester
Analytical techniques to assess human impacts on the environment. Team-taught by faculty from law, ethics, anthropology and economics with experience in local, regional and global environmental management issues.
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF THE INSTRUCTOR

ECS309 Microbes and the Environment
3 credits Fall Semester
PREREQUISITE: GSC 110/114, GSC 111 OR PERMISSION OF INSTRUCTOR
ECS310 Sustainable Living  
3 credits  
Spring Semester  
Sustainable Living explores ways of living that can be sustained for thousands of years, without further damage to earth, ocean and atmosphere. Topics covered include renewable energy, agricultural practices, water issues, green building, low carbon transportation and healthy living/eating. Students advocate for sustainable practices of their choice in writing and in oral/visual presentations. Frequent field trips.  
PREREQUISITE: ECS 111 OR PERMISSION OF INSTRUCTOR.

ECS332 Ecology and Land Use in the Galapagos  
3 credits  
Fall Semester  
PREREQUISITE: BIL 250 OR BIL 255 OR PERMISSION OF INSTRUCTOR.

ECS371 Readings in Ecosystem Science and Policy  
1-2 credits  
Offered By Announcement Only  
Supervised readings on special topics. Offered by special arrangement with a faculty member. May be repeated for credit.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

ECS372 Special Topics in Ecosystem Science and Policy  
1-3 credits  
Offered By Announcement Only  
Content varies by semester and is indicated in parentheses following course number and title in class schedule.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

ECS373 Topics in Ecosystem Science  
3 credits  
Fall & Spring Semester & First & Second Summer Session

ECS374 Topics in Environmental Policy  
3 credits  
Fall & Spring Semester & First & Second Summer Session

ECS375 Topics in Environment and the Humanities  
3 credits  
Offered By Announcement Only

ECS376 Topics in Environmental Communication  
3 credits  
Offered By Announcement Only

ECS377 Topics in Environmental Economics and Development  
3 credits  
Offered By Announcement Only

ECS380 Field Studies in Ecosystem Science and Policy  
1-4 credits  
Offered By Announcement Only  
Field course to various U.S. and international regions, focusing on current and historic interactions of humans with the local environment. Includes water, land, and mineral resources as well as impacts on local ecosystems. Emphasis on current management efforts and potential impacts of climate change.  
PREREQUISITE: ADVANCED UNDERGRADUATE STANDING AND PERMISSION OF DEPARTMENT

ECS401 Internship  
3 credits  
Fall & Spring Semester & First & Second Summer Session  
Students selecting the internship will be required to spend a minimum of 120 contact hours working in an outside firm or agency whose mission is to address environmental issues where science and policy intersect.  
PREREQUISITE: SENIOR STANDING OR PERMISSION OF INSTRUCTOR.
ECS402 Thesis
3 credits  Fall & Spring Semester & First & Second Summer Session
Individual, original research of independent study supervised by a UM faculty member and concluded by formal thesis preparation, public oral defense and submission of the thesis.
PREREQUISITE: SENIOR STANDING OR PERMISSION OF INSTRUCTOR

ECS403 Interdisciplinary Approaches
3 credits  Fall & Spring Semester
Students with diverse disciplinary backgrounds will design an interdisciplinary study focused on an environmental problem with a major science component and significant societal implications. Students will apply quantitative methods, formulate usable policy, and communicate their results.
PREREQUISITE: CO-REQUISITES OR PREREQUISITES ECS 301, ECS 302

ECS405 APPLIED RESEARCH IN ECOSYSTEM SCIENCE AND POLICY
1-3 credits  Fall & Spring Semester & Second Summer Session
Faculty-mentored applied research in environmental topics. Projects in natural ecosystems, sustainable design and business, and communication of environmental issues.
PREREQUISITE: 9 CREDITS IN ECS

ECS432 Ecology in the Galapagos
3 credits  Fall Semester
PREREQUISITE: BIL 332/ ECS 332 OR PERMISSION OF INSTRUCTOR

ECS433 Conservation in Practice
3 credits  Fall Semester
PREREQUISITE: BIL 432/ ECS 432 OR PERMISSION OF INSTRUCTOR

ECS501 Interdisciplinary Environmental Theory
3 credits  Fall Semester
Theoretical approaches in environmental and social science fields, including conservation biology, ecology, geography, economics, sociology, anthropology, philosophy, and interdisciplinary approaches. Themes include human ecology, historical ecology, landscape ecology, environmental law and ethics, perception of risk and uncertainty, vulnerability and adaptation, and environmental valuation.
PREREQUISITE: SENIOR OR GRADUATE STANDING IN ECS

ECS503 Interdisciplinary Environmental Methods
3 credits  Fall Semester
Environmental methods related to core programmatic themes of Urban Ecology, Global Public Health, Climate and Society, Environment and the Media, Integrated Marine and Terrestrial Management, and Regulatory Regimes. The course focuses on the application of Interdisciplinary approaches and methods for addressing complex environmental problems. Students will learn to design and employ interdisciplinary approaches, using qualitative and quantitative methods and analysis, through lectures, reading assignments, discussion sessions, and assignments.
PREREQUISITE: SENIOR OR GRADUATE STANDING IN ECS
ECS507  INTERDISCIPLINARY ENVIRONMENTAL DECISION ANALYSIS
3 credits  Fall Semester
Approaches to studying and interpreting human behavior related to a range of decision making at the level of individual, group, and firm. Multidisciplinary theories and methods informing work in the decision sciences will be covered from fields of psychology, business, economics, political science, and anthropology.
PREREQUISITE: SENIOR OR GRADUATE STANDING IN ECS.

ECS572  Special Topics in ECS
0-3 credits  Fall & Spring Semester & First & Second Summer Session
Content varies by semester and is indicated in parentheses following course number and title in class schedule.
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR

ECS580  Field Studies
1-4 credits  Offered By Announcement Only
This course will provide participants with the opportunity for intensive field research geared toward an interdisciplinary understanding of environmental issues and conservation concerns.
PREREQUISITE: ADVANCED UNDERGRADUATE STANDING OR PERMISSION OF INSTRUCTOR

ENGLISH

ENG103  Basic Academic Writing
3 credits  Fall & Spring Semester
Intensive approach to the basics of academic writing with emphasis on building written fluency, using conventions of standard written English, and editing for precision and correctness. Intended for students who need extra preparation before entering ENG 105. Not for credit toward graduation.

ENG105  English Composition I
3 credits  Fall & Spring Semester
Introduction to written academic argument and inquiry. Not for major or minor. Cannot be taken on credit-only option.

ENG106  English Composition II
3 credits  Fall & Spring Semester
Advanced approaches to written academic argument, with emphasis on textual analysis and incorporation of secondary sources. Not for major or minor. Cannot be taken on credit-only option.
PREREQUISITE: ENG 105.

ENG107  English Composition II: Science and Technology
3 credits  Fall & Spring Semester
Advanced approaches to written academic argument, with emphasis on textual analysis and incorporating source material using readings and approaches connected to science and technology. Alternative to ENG 106. Not for major or minor. Cannot be taken on credit-only option.
PREREQUISITE: ENG 105-ENGLISH COMPOSITION I

ENG20T  Advanced Composition
0 credit  Not Offered; Transfer Credit Only
PREREQUISITE: MDCC TRANSFER COURSE.
ENG201 World Literary Masterpieces I  
3 credits  Fall & Spring Semester & First & Second Summer Session  
Comparative study of literary masterpieces from ancient times through the Renaissance.  
Satisfies writing requirement.  
PREREQUISITE: PREREQUISITE OR COREQUISITE ENG 106

ENG202 World Literary Masterpieces II  
3 credits  Fall & Spring Semester & First & Second Summer Session  
Comparative study of literary masterpieces from the Renaissance to the present.  
Satisfies writing requirement.  
PREREQUISITE: PREREQUISITE OR COREQUISITE ENG 106

ENG205 Jewish Literature  
3 credits  Offered By Announcement Only  
Selections from the Bible, the Talmud, the Kabbalah, medieval poetry and prose,  
Yiddish and Sephardic literature, and contemporary American and Israeli writers.  
PREREQUISITE: PREREQUISITE OR COREQUISITE ENG 106

ENG208 Advanced Academic Writing for Transfer Students  
3 credits  Fall & Spring Semester  
Review of research techniques and revision strategies. Completes the university  
composition requirement for those students who transfer into UM with credit for  
one composition course from another institution. Open only to transfer students  
who have received transfer credit for either English 105 or English 106. Not open  
to students who have taken either English 105 and/or 106 at UM.  
PREREQUISITE: OPEN ONLY TO TRANSFER STUDENTS WHO HAVE RECEIVED TRANSFER CREDIT  
FOR EITHER ENGLISH 105 OR ENGLISH 106. NOT OPEN TO STUDENTS WHO HAVE TAKEN EITHER  
ENGLISH 105 AND/OR 106 AT UM

ENG209 Creative Writing  
3 credits  Fall & Spring Semester & First & Second Summer Session  
Analysis and writing of Short stories and poems. Cannot be taken for credit only.  
PREREQUISITE: ENG 105 OR EQUIVALENT. CANNOT BE TAKEN FOR CREDIT ONLY.

ENG210 Literary Themes and Topics  
3 credits  Offered By Announcement Only  
Literary analysis and practice in critical writing through the study of selected  
works; themes and topics vary by semester.  
PREREQUISITE: PREREQUISITE OR COREQUISITE ENG 106

ENG211 English Literature I  
3 credits  Fall & Spring Semester & First & Second Summer Session  
Selected readings from the middle ages to the late 18th century. Satisfies writing  
requirement.  
PREREQUISITE: PREREQUISITE OR COREQUISITE ENG 106

ENG212 English Literature II  
3 credits  Fall & Spring Semester & First & Second Summer Session  
Selected readings from the late 18th century to the present. Satisfies writing  
requirement.  
PREREQUISITE: PREREQUISITE OR COREQUISITE ENG 106
ENG213 American Literature I
3 credits                    Fall & Spring Semester & First & Second Summer Session
Selected American authors prior to the Civil War. Satisfies writing requirement.
PREREQUISITE: PREREQUISITE OR COREQUISITE ENG 106

ENG214 American Literature II
3 credits                    Fall & Spring Semester & First & Second Summer Session
Selected American authors from the Civil War to the present. Satisfies writing requirement.
PREREQUISITE: PREREQUISITE OR COREQUISITE ENG 106

ENG215 English and American Literature by Women
3 credits                                              Offered By Announcement Only
A survey of women writers from the Middle Ages to the present; explores the female literary tradition and women's relationship to culture and society.
PREREQUISITE: PREREQUISITE OR COREQUISITE ENG 106

ENG220 Introduction to Poetry
3 credits                                              Offered By Announcement Only
Introduction to the forms of poetry through the analysis of representative poems.
PREREQUISITE: PREREQUISITE OR COREQUISITE ENG 106

ENG221 Introduction to Fiction
3 credits                                              Offered By Announcement Only
Forms of prose fiction and the analysis of representative short stories and novels.
PREREQUISITE: PREREQUISITE OR COREQUISITE ENG 106

ENG230 Advanced Business Communication
3 credits                    Fall & Spring Semester & First & Second Summer Session
Professional writing with critical attention to complex rhetorical situations.
Practice in formal and informal written communication styles.

ENG245 The Circle of Knowledge: Science and the Humanities
3 credits                                                    Fall Semester

ENG260 African-American Literature
3 credits                                              Offered By Announcement Only
Selected readings of the eighteenth century to the present.
PREREQUISITE: ENG 106 OR EQUIVALENT.

ENG261 Literature of the Americas
3 credits                                              Offered By Announcement Only
Selected readings from North, Central, and South American, and Caribbean literatures from their origins to the present.
PREREQUISITE: ENG 106 OR EQUIVALENT.

ENG290 Beginning Fiction Workshop
3 credits                    Fall & Spring Semester
Frequent exercises in workshop environment, with readings in contemporary fiction. Attention to tense and points of view; reviews of grammar and punctuation. 30-40 pages of creative writing, including development and revision of one full-length short story (12-20 pages).
PREREQUISITE: ENG 106 OR EQUIVALENT AND ADMISSION TO THE CREATIVE WRITING TRACK BASED ON CREATIVE WRITING SAMPLE.
ENG292 Beginning Poetry Workshop
3 credits
Fall & Spring Semester
Emphasis of creation and critique of new student poetry in workshop setting; continued reading in genre. Variety of styles and techniques presented, including line, image and metaphor. 12-15 new poems, plus revisions, required.
PREREQUISITE: ENG 106, OR EQUIVALENT AND ADMISSION TO THE CREATIVE WRITING TRACK BASED ON CREATIVE WRITING SAMPLE.

ENG301 The Study of Language
3 credits
Offered By Announcement Only
Language itself as an object of study; broad linguistic issues of language types, processes of language change, and language variation. Emphasis on language in "real world" applications such as law, folk culture, poetry, education, and computers.
PREREQUISITE: ENG106 OR EQUIVALENT.

ENG306 Advanced Composition
3 credits
Offered By Announcement Only
Composition and analysis of English prose. Topics vary. May be repeated if topics are different.
PREREQUISITE: ENG 106 OR EQUIVALENT.

ENG310 Literature and Culture in Classical Greece and Rome, I
3 credits
Offered By Announcement Only
Major pre-classical and classical Greek writers, including Homer, Sappho, Pindar, Aeschylus, Herodotus, and Sophocles, treated by close analysis, and attention to connecting themes; Greek art and archeology in reference to specific texts.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG311 Literature and Culture in Classical Greece and Rome, II
3 credits
Offered By Announcement Only
Thucydides on the Peloponnesian War; the drama of Euripides and Aristophanes; the dialogues of Plato on Socrates' trial and death; Aristotle's Poetics. Early Roman tradition; Rome and its relation to Greek culture; Livy on Roman history; Cicero, Virgil's Aeneid, Marcus Aurelius.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG312 The European Middle Ages
3 credits
Offered By Announcement Only
British and continental literature and thought from the 5th through the 15th centuries.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG313 The European Renaissance
3 credits
Offered By Announcement Only
Major writers of the European Renaissance, such as Petrarch, Machiavelli, Castiglione, Erasmus, More, Rabelais, Montaigne, Marguerite de Navarre.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG314 The European Enlightenment
3 credits
Offered By Announcement Only
Major writers of the European Enlightenment, such as Locke, Montesquieu, Vico, Hume, Voltaire, Rousseau, Diderot, Lessing, Smith, and Kant.
PREREQUISITE: ENG 106 OR EQUIVALENT

884
ENG315 The Classical Epic Tradition
3 credits
Offered By Announcement Only
The rise and development of the Western epic tradition from Homer, Lucretius, and Virgil in the classical world, through Dante in the Middle Ages, Milton in the Renaissance, and Wordsworth and Eliot in modernity.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG319 Shakespeare
3 credits
Offered By Announcement Only
Representative comedies, histories, tragedies and romances. Not for students who have taken ENG 430 or 431; may not be taken concurrently with ENG 430 or 431.
PREREQUISITE: ENG 106 OR EQUIVALENT. NOT FOR STUDENTS WHO HAVE TAKEN ENG 430 OR 431; MAY NOT BE TAKEN CONCURRENTLY WITH ENG 430 OR 431.

ENG321 Major American Novelists
3 credits
Offered By Announcement Only
Works by selected American novelists.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG323 Major British Novelists
3 credits
Offered By Announcement Only
Works by selected British novelists.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG325 Major European Novelists
3 credits
Offered By Announcement Only
Works by selected European novelists.
PREREQUISITE: ENG106 OR EQUIVALENT

ENG331 Legal Writing
3 credits
Offered By Announcement Only
A study of the composition of legal arguments in court opinions, legal briefs, oral arguments before the Supreme Court, and social-legal documents. Emphasis on analysis of issues, structure and style of legal writing, and the function of logic in persuasion.
PREREQUISITE: ENG 106 OR EQUIVALENT.

ENG333 Writing the Research Paper
3 credits
Offered By Announcement Only
Advanced techniques in conducting research and writing the research paper. Use of traditional library resources, on-line searches, the Internet, and other research methods. Strategies for effective presentation of research findings. Students not in the Bachelor of General Studies program need permission of instructor.
PREREQUISITE: ENG 106 OR EQUIVALENT. STUDENTS NOT IN THE BACHELOR OF GENERAL STUDIES PROGRAM NEED PERMISSION OF INSTRUCTOR.

ENG334 Legal Rhetoric
3 credits
Offered By Announcement Only
Legal texts and the rhetoric of legal discourse.
PREREQUISITE: ENG 106 OR EQUIVALENT
ENG340 Forms of the Novel
3 credits
Offered By Announcement Only
Techniques and esthetics of the novel form; emphasis on major tendencies in the evolution of long prose fiction rather than on chronological development.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG341 Modern British and American Poetry
3 credits
Offered By Announcement Only
Representative poets and critics of poetry since 1900; attention to the basic principles of poetics.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG342 Lyric Voices and Traditions
3 credits
Offered By Announcement Only
Major figures and trends in the history of lyric poetry.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG360 Comparative Literature of the Black World
3 credits
Offered By Announcement Only
Oral and written Black literature in Africa, the United States, the Caribbean, and South America.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG361 Caribbean Literature
3 credits
Offered By Announcement Only
Introduction to twentieth-century literature with special emphasis on the regional preoccupation with a distinctly Caribbean aesthetic.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG363 Jewish American Literature
3 credits
Offered By Announcement Only
Twentieth-century Jewish writers in the United States such as Singer, Bellow, Roth, Ozick, and Malamud.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG364 Sephardic Literature
3 credits
Offered By Announcement Only
Judeo-Spanish culture and literature from medieval times to the present.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG365 Literature of the Holocaust
3 credits
Offered By Announcement Only
Literature relating to the Nazi genocide and its aftermath.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG366 Asian American Literature
3 credits
Offered By Announcement Only
Literature by Asian immigrants and exiles in the United States.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG372 Women Writing: Theory and Practice
3 credits
Offered By Announcement Only
Women writers, emphasizing the role of gender in literary creation.
PREREQUISITE: ENG 106 OR EQUIVALENT
ENG373 Literary Representations of Women
3 credits
Offered By Announcement Only
The portrayal of women in literature from ancient times to the present.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG374 Women Writers
3 credits
Offered By Announcement Only
A study of women's writings and feminist criticism from 1930 to the present.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG375 Modern Drama
3 credits
Offered By Announcement Only
The major dramatists of the modern world: Ibsen, Chekhov, Strindberg, Shaw, Pirandello, and O'Neill.
PREREQUISITE: ENG OR EQUIVALENT

ENG376 Contemporary Drama
3 credits
Offered By Announcement Only
The dramatists of our time: Albee, Miller, Williams, Becket, Sartre, Genet, Pinter, Osborne, Stoppard, Durenmatt, and others.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG379 Modern Literature
3 credits
Offered By Announcement Only
Western literature of the modern era. emphasizing roots, traditions, practices.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG380 Contemporary Literature
3 credits
Offered By Announcement Only
Fiction, drama, and poetry from World War II to the present.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG383 The Literature of Science Fiction
3 credits
Offered By Announcement Only
A general survey of the literature of science fiction, with emphasis on writings of the twentieth century.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG384 The Bible as Literature
3 credits
Offered By Announcement Only
Selected readings from the Bible.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG385 Myth and Literature
3 credits
Offered By Announcement Only
A study of myth and ritual and their relation to literary works, from the early epic to contemporary literature.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG386 King Arthur in Literature
3 credits
Offered By Announcement Only
King Arthur in literature from the fifteenth to the twentieth century in England and America.
PREREQUISITE: ENG 106 OR EQUIVALENT
ENG387 Literature and Imperialism
3 credits
Offered By Announcement Only
Relationships between empire and literary expression. Works by authors such as Shakespeare, Behn, Defoe, Bronte, Conrad, Kipling, Melville, Yeats, Twain, and Forster.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG388 Literature and Popular Culture
3 credits
Offered By Announcement Only
Literary forms of popular expression, considered in relation to politics, ideology, gender, or race; comparison to other forms of popular culture in print, music, or the visual media.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG390 Intermediate Fiction Workshop
3 credits
Fall & Spring Semester
Review of craft issues presented in 290, with emphasis on development of structure and contemporary use of point of view.
PREREQUISITE: ENG 290 OR PERMISSION OF CREATIVE WRITING DIRECTOR. MAY NOT BE TAKEN CONCURRENTLY WITH ANOTHER CREATIVE WRITING WORKSHOP

ENG392 Intermediate Poetry Workshop
3 credits
Fall & Spring Semester
Review of craft issues presented in 292, integrating formal strategies with research topics.
PREREQUISITE: ENG 292 OR PERMISSION OF CREATIVE WRITING DIRECTOR. MAY NOT BE TAKEN CONCURRENTLY WITH ANOTHER CREATIVE WRITING WORKSHOP.

ENG395 Special Topics
3 credits
Offered By Announcement Only
Content varies by semester and is indicated in parentheses following course number and title in Class Schedule.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG396 Special Topics
3 credits
Offered By Announcement Only
Content varies by semester and is indicated in parentheses following course number and title in Class Schedule.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG397 Special Topics
3 credits
Offered By Announcement Only
Content varies by semester and is indicated in parentheses following course number and title in Class Schedule.
PREREQUISITE: ENG 106 OR EQUIVALENT

ENG398 Directed Readings/Directed Research
3 credits
Offered By Announcement Only
By arrangement with instructor. Content varies.
PREREQUISITE: PERMISSION OF DIRECTOR OF UNDERGRADUATE STUDIES AND THREE CREDITS IN LITERATURE.
ENG401 Senior Seminar in Literature
3 credits
An intensive study of a literary topic or figure.
PREREQUISITE: 15 CREDITS IN LITERATURE AND AT LEAST ONE 400 LEVEL COURSE IN LITERATURE.

ENG402 Independent Study
1 credit
Offered By Announcement Only
PREREQUISITE: SIX CREDITS IN LITERATURE

ENG404 Creative Writing (Prose Fiction)
3 credits
Offered By Announcement Only
Work toward professional standards primarily in prose fiction. Student fiction is considered in workshop sessions with comment by members of the class and instructors.
PREREQUISITE: ENG 390 OR PERMISSION OF CREATIVE WRITING DIRECTOR. MAY NOT BE TAKEN CONCURRENTLY WITH ANOTHER CREATIVE WRITING WORKSHOP.

ENG406 Creative Writing (Poetry)
3 credits
Offered By Announcement Only
Work toward professional standards in poetry. Student poetry is considered in workshop sessions with comment by members of the class and by instructor.
PREREQUISITE: ENG 392 OR PERMISSION OF CREATIVE WRITING DIRECTOR. MAY NOT BE TAKEN CONCURRENTLY WITH ANOTHER CREATIVE WRITING WORKSHOP.

ENG408 Writing Autobiography
3 credits
Offered By Announcement Only
Literary style and method using student autobiography as a resource.
PREREQUISITE: ENG 390 OR 392 OR PERMISSION OF CREATIVE WRITING DIRECTOR. MAY NOT BE TAKEN CONCURRENTLY WITH ANOTHER CREATIVE WRITING WORKSHOP.

ENG410 Old English Language and Literature
3 credits
Offered By Announcement Only
The grammar, syntax, and phonology of Old English language; readings in Old English poetry and prose.
PREREQUISITE: THREE CREDITS IN LITERATURE.

ENG411 Old English Literature
3 credits
Offered By Announcement Only
Translation and Close analysis of Beowulf or other major poetic texts of Old English literature.
PREREQUISITE: ENG 410, OR ITS EQUIVALENT, AND SIX CREDITS IN LITERATURE.

ENG420 Chaucer
3 credits
Offered By Announcement Only
Chaucer's major works.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG430 Shakespeare: The Early Plays
3 credits
Offered By Announcement Only
Shakespeare's plays from the period 1583-1600. May not be taken concurrently with ENG 319.
PREREQUISITE: SIX CREDITS IN LITERATURE. MAY NOT BE TAKEN CONCURRENTLY WITH ENG 319.
ENG431 Shakespeare: The Later Plays
3 credits
Offered By Announcement Only
A study of the second half of Shakespeare's canon, read in chronological sequence. The plays will be selected from those composed in the period 1600-1611. May not be taken concurrently with ENG 319.
PREREQUISITE: SIX CREDITS OF LITERATURE. MAY NOT BE TAKEN CONCURRENTLY WITH ENG 319.

ENG432 English Renaissance Poetry and Prose
3 credits
Offered By Announcement Only
A study of such figures as Wyatt, Sidney, Spenser, Nashe, Marlowe, Shakespeare, Jonson, Donne, Bacon, Milton.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG433 English Renaissance Drama
3 credits
Offered By Announcement Only
English drama during the sixteenth and seventeenth centuries.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG434 Seventeenth-Century Poetry and Prose
3 credits
Offered By Announcement Only
Seventeenth-century writers and forms, including work by major and minor writers such as James I, Jonson, Donne, Bacon, Lovelace, Carew, Herrick, Andrewes, Herbert, Milton, Marvell, Clarendon, Dryden, Rochester, Behn, and Bunyan.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG435 Milton
3 credits
Offered By Announcement Only
Selected readings in the poetry and prose of John Milton.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG440 Restoration and Eighteenth-Century Literature
3 credits
Offered By Announcement Only
English poetry and prose, exclusive of the novel, from Dryden to Burns.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG441 18th-Century British Novel
3 credits
Offered By Announcement Only
The British novel through the late eighteenth century.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG442 Politics and Literature
3 credits
Offered By Announcement Only
Relations between political theories and forms of literary expression.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG450 The Early Romantic Period
3 credits
Offered By Announcement Only
The rise of Romanticism in England and the first generation of writers, Blake, Wordsworth, Coleridge, and their contemporaries.
PREREQUISITE: SIX CREDITS IN LITERATURE.
ENG451 The Late Romantic Period
3 credits  Offered By Announcement Only
The second generation of English Romantic writers: Byron, Shelley, Keats, and their contemporaries.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG455 Victorian Poetry and Prose
3 credits  Offered By Announcement Only
Selected English poetry and prose of the period, exclusive of the novel.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG456 Nineteenth-Century English Novel
3 credits  Offered By Announcement Only
Studies in the development of the English novel from Scott to Conrad.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG460 Modern British Literature
3 credits  Offered By Announcement Only
Studies in Edwardian and Modern literature. Modernist theory and techniques will be illustrated by reference to the work of selected major figures since 1900.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG461 Contemporary British Literature
3 credits  Offered By Announcement Only
British literature from World War II to the present.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG465 Irish Literature
3 credits  Offered By Announcement Only
Twentieth-century Irish writers such as Yeats, Synge, Joyce, Stephens, O'Casey, Beckett, and Lavin. Consideration of Irish history, mythology, politics, and culture.
PREREQUISITE: SIX CREDITS OF LITERATURE.

ENG466 Joyce
3 credits  Offered By Announcement Only
The major works of James Joyce.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG470 Contemporary British and American Poetry
3 credits  Offered By Announcement Only
The poetry of the contemporary period, 1945 to the present.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG472 Literature and Psychoanalytic Theory
3 credits  Offered By Announcement Only
A study of the ways in which Literature, Literary Criticism, and Psychoanalytic Theory interact.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG473 Twentieth-Century Literary Theory
3 credits  Offered By Announcement Only
An introduction to the major theories of the past century (e.g., psychoanalytic, formalist, materialist, feminist, new historicist).
PREREQUISITE: SIX CREDITS IN LITERATURE.
ENG480 Early American Literature
3 credits Offered By Announcement Only
American writing before 1800. Topics such as colonialism, ethnicity, nationalism, and the ideology of individualism.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG482 American Literature: 1800-1865
3 credits Offered By Announcement Only
Topics such as individualism, slavery, class and gender relations. Works by Emerson, Poe, Hawthorne, Melville, Douglass, Stowe, and others.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG483 American Literature: 1865-1915
3 credits Offered By Announcement Only
The works of such writers as Twain, Howells, James, Dickinson, Robinson, Crane, Norris, London, and Dreiser.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG484 American Literature: 1915 to 1945
3 credits Offered By Announcement Only
The works of such writers as Pound, Eliot, H.D., Stein, Frost, Stevens, e.e. cummings, Ransom, Tate, Fitzgerald, Hemingway, Djuna Barnes, Faulkner, O'Neill.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG485 American Literature: 1945 to the Present
3 credits Offered By Announcement Only
An intensive inquiry into the works of such writers as Albee, Bellow, Ferlinghetti, Ginsberg, Kerouac, Mailer, Miller, O'Connor, Plath, Welty.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG486 Early African-American Literature
3 credits Offered By Announcement Only
African-American literature from the beginnings to the Harlem Renaissance of the nineteen twenties.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG487 Modern African-American Literature
3 credits Offered By Announcement Only
African-American literature from the Harlem Renaissance to the present.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG488 Race, Ethnicity, and Literature
3 credits Offered By Announcement Only
Topic varies by semester. The Construction of racial and ethnic difference in literature, focusing on the politics of group affiliation and identity.
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG490 Studies in Women and Literature
3 credits Offered By Announcement Only
Content varies by semester. Topics such as women in classical antiquity, women in the middle ages, women in the Renaissance, women in the Restoration and eighteenth century, women in the Romantic and Victorian period.
PREREQUISITE: SIX CREDITS IN LITERATURE.
ENG491 Russian and Soviet Classics in English  
3 credits  
Offered By Announcement Only  
Survey of Russian literature in translation from the late 19th century to the present.  
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG492 Postcolonial Literature and Theory  
3 credits  
Offered By Announcement Only  
The legacy of colonialism as expressed in the works of Gordimer, Rushdie, Achebe, Walcott, Cesaire, Naipaul, Mukherjee, Crow Dog, Menchu, and others. Readings will address theoretical issues such as national formation, cultural hybridity, globalization.  
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG493 History of Literary Criticism  
3 credits  
Offered By Announcement Only  
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG494 Feminist Literary Theory  
3 credits  
Offered By Announcement Only  
Examination of women's contributions to literary theory.  
PREREQUISITE: SIX CREDITS IN LITERATURE INCLUDING AT LEAST ONE 300-LEVEL COURSE IN LITERATURE.

ENG495 Special Topics  
3 credits  
Offered By Announcement Only  
Content varies by semester and is indicated parenthetically following the title in the class schedule.  
PREREQUISITE: SIX CREDITS IN LITERATURE.

ENG496 Independent Study  
1-3 credits  
Offered By Announcement Only  
Content varies by semester and is indicated in parentheses following the title in the class schedule.  
PREREQUISITE: SIX CREDITS IN ENGLISH LITERATURE AND PERMISSION OF INSTRUCTOR.

ENG497 Senior Thesis I  
3 credits  
Offered By Announcement Only  
Content varies by semester and is indicated in parentheses following the title in the class schedule.  
PREREQUISITE: SENIOR STATUS APPROVAL OF THE DIRECTOR OF UNDERGRADUATE STUDIES, AND PERMISSION OF THE FACULTY THESIS DIRECTOR.

ENG498 Senior Thesis II  
3 credits  
Offered By Announcement Only  
Partial requirement for Departmental Honors in English. Thesis to be a documented essay on a literary subject written under the direction of a member of the English faculty.  
PREREQUISITE: ENG 497, SENIOR STATUS APPROVAL OF THE DIRECTOR OF UNDERGRADUATE STUDIES, AND PERMISSION OF THE FACULTY THESIS DIRECTOR.

ENG504 Form in Poetry  
3 credits  
Offered By Announcement Only  
Poetic works as literary objects, with attention to poetic trends and the creative process.  
PREREQUISITE: PERMISSION OF INSTRUCTOR. SIX CREDITS IN LITERATURE OR GRADUATE STANDING.
ENG505 Form in Fiction
3 credits
Offered By Announcement Only
Fictional works as literary objects with attention to individual styles, Fictional Trends and the creative process.
PREREQUISITE: GRADUATE STUDENTS: PERMISSION OF INSTRUCTOR. UNDER-GRADUATES: SIX CREDITS IN LITERATURE AND PERMISSION OF INSTRUCTOR.

ENG560 Creative Writing: Fiction I
3 credits
Offered By Announcement Only
Advanced work in the writing of fiction.
PREREQUISITE: PERMISSION OF INSTRUCTOR AND, FOR UNDERGRADUATE, SIX CREDITS IN ENGLISH AT THE 200 LEVEL OR ABOVE

ENG561 Creative Writing: Fiction II
3 credits
Offered By Announcement Only
Advanced work for students displaying superior ability for prose fiction writing.
Admission by recommendation or demonstration of skills.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

ENG562 Creative Writing: Poetry
3 credits
Offered By Announcement Only
Advanced work in the writing of poetry.
PREREQUISITE: AT LEAST SIX CREDITS IN ENGLISH AT THE 200 LEVEL OR ABOVE OR GRADUATE STANDING.

ENG591 Graduate Practicum I: Teaching College Writing
0 credit
Fall Semester
Methods and problems in teaching English composition and college writing.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG592 Graduate Practicum II: Teaching College Literature
0 credit
Spring Semester
Methods and problems in teaching introductory literature courses.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG595 Special Topics
3 credits
Offered By Announcement Only
PREREQUISITE: FOR UNDERGRADUATES, SIX CREDITS IN LITERATURE OR PERMISSION OF INSTRUCTOR; FOR GRADUATE STUDENTS, PERMISSION OF DIRECTOR OF GRADUATE STUDIES.

FRENCH
FRE101 Elementary French I
3 credits
Fall & Spring Semester & First Summer Session
For students with no background or previous study of French. The focus of FRE 101 is the development of communicative abilities in speaking, reading, writing, and comprehension of French and an introduction to the cultural practices of the Francophone world. Themes on: university life, family, leisure activities, home and community. Includes both oral and written assessment of grammatical structures and vocabulary introduced, informal and formal writing. Conducted entirely in French. Not open to students who have completed 2 or more years of high school French. Closed to heritage or native speakers of French.
FRE102 Elementary French II  
3 credits  
Fall & Spring Semester & First Summer Session  
Continuation of FRE 101. The development of communicative abilities in speaking, reading, writing, and comprehension of French and an introduction to the cultural practices of the Francophone world. Themes on: childhood and adolescence, food and lifestyle, university life and professions. Includes both oral and written assessments of grammatical structures and vocabulary introduced, informal and formal writing. Conducted entirely in French.  
PREREQUISITE: FRE 101 OR THE EQUIVALENT OF FRE 101 AT ANOTHER INSTITUTION. CLOSED TO HERITAGE AND NATIVE SPEAKERS.

FRE105 Accelerated Elementary French  
3 credits  
Fall & Spring Semester  
For students with previous study of French desiring to review material covered in FRE 101 and 102 in preparation for continued study of French at the intermediate level. The focus of FRE 105 is the continued development of communicative abilities in speaking, reading, writing, and comprehension of French and an introduction to the cultural practices of the Francophone world. Themes on: family, leisure activities, home, and community, childhood and adolescence, food and lifestyle, university life and professions. Includes both oral and written assessments of grammatical structures and vocabulary introduced, informal and formal writing. Conducted entirely in French.  
PREREQUISITE: THREE OR MORE YEARS OF HIGH SCHOOL FRENCH OR THE EQUIVALENT. CLOSED TO HERITAGE AND NATIVE SPEAKERS.

FRE211 Intermediate French I  
3 credits  
Fall & Spring Semester & First Summer Session  
For students with previous study of elementary-level French. The continued development of communicative abilities in speaking, reading, writing, and comprehension of French and an introduction to the cultural practices of the Francophone world. Themes on: travel, technological innovations, the evolution of family values, and social and environmental issues. Includes both oral and written assessments of grammatical structures and vocabulary introduced, informal and formal writing. Conducted entirely in French.  
PREREQUISITE: FRE 102 OR FRE 105, OR EQUIVALENT. CLOSED TO HERITAGE OR NATIVE SPEAKERS OF FRENCH.

FRE212 Intermediate French II  
3 credits  
Fall & Spring Semester  
For students with some previous study of French at the intermediate level, who are familiar with all tenses and with vocabulary related to the topics covered in FRE 101-211. FRE 212 is the first semester of a two-semester sequence ending with FRE 214. The continued development of skills in reading, writing, speaking, and listening in French, with an additional emphasis on cultural competence in the French-speaking world. Themes on: relationships, cultural values, different historical perspectives, and current politics. These themes will be explored through articles, films and literary texts. The course will develop writing and reading strategies, providing them with the tools to think, read, and write critically and analytically in papers of 1-3 pages. Progress will also be accessed through quizzes and exams. Course conducted entirely in French.  
PREREQUISITE: FRE 211 OR 5-6 YEARS OF HIGH SCHOOL FRENCH. CLOSED TO NATIVE SPEAKERS OF FRENCH.
FRE214 Advanced French
3 credits                                  Fall & Spring Semester
Continuation of FRE 212. This course will prepare students for advanced literature, linguistics, and culture courses. The class will use films, literary works, and other cultural texts. Students will write analytic essays of 3-5 pages to develop style, vocabulary, and syntax. Course conducted entirely in French.
PREREQUISITE: FRE 212 CLOSED TO NATIVE SPEAKERS OF FRENCH.

FRE300 Nation on the fault lines: Haiti, Immigration and the Arts
3 credits                                  Fall Semester
This course in French culture and civilization will study the evolution of French society through film. Students will learn to "read" films critically and will examine 15 of the major films produced between 1929 and 2001, in addition to 4 short documentaries presenting the main aspects of the early stages of French Cinematography from 1895 to 1925 (Auguste and Louis Lumiere; Melies; Pathe, Zecca). This course will also include theoretical readings aimed at helping students develop analytical and critical skills useful in their evaluation of the contextual production of French cinema. This course is for students in the Bachelor of General Studies.

FRE301 Introduction to Literature and Culture in French
3 credits                                  Fall & Spring Semester
Selected materials from various genres and periods of French Literature. Further development of critical writing skills for non-native speakers. Closed to native speakers formally educated in French. May be used to fulfill the humanities literature requirement. Writing credit.
PREREQUISITE: FRE 214 OR EQUIVALENT.

FRE302 The Cultures of France
3 credits                                  Offered By Announcement Only
Historical survey of French intellectual, artistic, and popular culture. Writing credit.
PREREQUISITE: FRE 214 OR EQUIVALENT.

FRE303 Introduction to Francophone Cultures
3 credits                                  Offered By Announcement Only
PREREQUISITE: FRE 214 OR EQUIVALENT

FRE310 Topics in French and Francophone Studies in Translation
3 credits                                  Offered By Announcement Only
PREREQUISITE: ENG 106 OR EQUIVALENT

FRE321 Literature, Film and Art in French: Topics
3 credits                                  Offered By Announcement Only
The study of literature through thematic readings. May be repeated for credit if topic is different. Topics vary. Writing credit.
PREREQUISITE: FRE 301 OR EQUIVALENT.

FRE322 Topics in Global French Culture
3 credits                                  Offered By Announcement Only
Cultural issues in France and/or French-speaking regions. Topics such as film, Caribbean history, journalism, Francophone Africa, immigration. May be repeated for credit if topic is different. Writing credit.
PREREQUISITE: FRE 301 OR PERMISSION OF THE INSTRUCTOR, FRE 302 RECOMMENDED.
FRE363 Introduction to Medieval and Renaissance French Literature
3 credits
Offered By Announcement Only
French literature from the 12th century to the end of the 16th century. May be used to fulfill the humanities literature requirement. Writing credit.
PREREQUISITE: FRE 301 OR EQUIVALENT.

FRE364 Introduction to 17th and 18th Century French Literature
3 credits
Offered By Announcement Only
French literature from the 17th and 18th centuries. May be used to fulfill the humanities literature requirement. Writing credit.
PREREQUISITE: FRE 301 OR EQUIVALENT.

FRE365 Introduction to 19th and 20th Century French Literature
3 credits
Offered By Announcement Only
French literature from the 19th and 20th centuries. May be used to fulfill the humanities literature requirement. Writing credit.
PREREQUISITE: FRE 301 OR EQUIVALENT.

FRE432 French for Global Business
3 credits
Fall Semester
Commercial Vocabulary, economic and technical terminology in French. Composition based on models of business correspondence directed to French speaking countries or firms.
PREREQUISITE: FRE 214 OR PERMISSION OF THE INSTRUCTOR.

FRE440 Advanced Oral Practice in French
3 credits
Offered By Announcement Only
French pronunciation based on phonetics. Exercises in diction and phonetic transcription.
PREREQUISITE: FRE 301 OR PERMISSION OF INSTRUCTOR.

FRE442 Advanced writing workshop in French
3 credits
Offered By Announcement Only
PREREQUISITE: FRE 301 OR PERMISSION OF INSTRUCTOR.

FRE495 Transfer Credits
1-3 credits
Not Offered; Transfer Credit Only
Awarded for 400-level course work at another institution for which UM has no direct equivalent.

FRE501 Capstone
3 credits
Fall & Spring Semester
Course with a broad-based topic designed to integrate high-level linguistic, critical and analytical skills with the body of knowledge acquired during the course of study toward the major. Topics vary. Open only to undergraduates in the last semester of their French major. Course is writing intensive; fulfills writing credit requirement.
PREREQUISITE: TO BE TAKEN IN THE LAST SEMESTER OF THE MAJOR.

FRE591 Directed Readings
1-3 credits
Offered By Announcement Only
May be repeated for credit if topic is different.
PREREQUISITE: ONE 500-LEVEL COURSE AND PERMISSION OF INSTRUCTOR.
FRE592 Directed Readings
1-3 credits
Offered By Announcement Only
PREREQUISITE: ONE 500-LEVEL COURSE AND PERMISSION OF INSTRUCTOR.

FRE593 Directed Readings
1-3 credits
Offered By Announcement Only
PREREQUISITE: ONE 500-LEVEL COURSE AND PERMISSION OF INSTRUCTOR.

FRE594 Senior honors Thesis I
3 credits
Fall & Spring Semester
Directed research for honors thesis.
PREREQUISITE: MUST HAVE COMPLETED AT LEAST TWELVE CREDITS AT THE 300-LEVEL OR ABOVE TOWARDS FRENCH MAJOR, MUST MEET ELIGIBILITY FOR HONORS IN FRENCH.

FRE595 Senior Honors Thesis II
3 credits
Fall & Spring Semester
Directed writing of honors thesis.
PREREQUISITE: FRE 594.

GEOGRAPHY

GEG105 World Regional Geography
3 credits
Fall & Spring Semester
An introduction to geography's basic concepts within the framework of a comprehensive survey of the world's major regions.

GEG110 Introduction to Human Geography
3 credits
Fall & Spring Semester
An introduction to the sub-fields of human geography by an examination of patterns and process in the international system.

GEG120 Physical Geography
3 credits
Fall & Spring Semester
The Earth system (atmosphere; hydrosphere; biosphere; lithosphere) emphasizing the interrelationships among its constituent subsystems; human-environmental interactions and geographic dimensions of these four subsystems.

GEG199 Introduction to GIS (Geographic Information Systems)
0-3 credits
Fall & Spring Semester
This course uses lecture and lab sessions to teach fundamental concepts in Geographic Information Systems (GIS) and introduce related geographic technologies (Global Positioning Systems, Remote Sensing, etc.). Topics include the nature and sources of digital and spatial data, map projections and datum, raster and vector data structures, raster and vector spatial analysis, and GIS project design. Students will learn to use ArcView and Idrisi, two leading GIS software programs.

GEG201 Topics in Geography
3 credits
Fall & Spring Semester
Content and prerequisites vary.
PREREQUISITE: ANY 100 LEVEL GEG COURSE.

GEG212 Geography of Middle America and the Caribbean
3 credits
Fall Semester
Human and physical geography of Middle America and the Caribbean.
GEG222 Geography of South America  
3 credits
Spring Semester
This course is an introduction to the geography of South America. It explores the physical, political, economic, social and cultural geographies of this diverse and complex world region. The course covers agrarian and urban land-use patterns, migration and territorial development and includes urban and regional planning, health, education and social services, with particular attention given to how these interventions address problems of uneven territorial development and social inequality.

GEG232 Geography and Development in Africa  
3 credits
Fall Semester
A survey of the geography of Africa south of the Sahara, with particular emphasis on development and the role of African states in the international system.

GEG242 Economic and Political Geography of the Middle East  
3 credits
Fall Semester
Human and physical geography of the Middle East with emphasis on current topics.

GEG252 United States and Canada  
3 credits
Spring Semester
Human and physical geography of North America.

GEG262 Political Geography of Europe  
3 credits
Spring Semester
Human and physical geography of contemporary Europe.

GEG272 Jewish Geography  
3 credits
Spring Semester
Introduces basic concepts in world Jewish geography and the geography of American Jews.
PREREQUISITE: NONE

GEG280 Introduction to Cartography and Computer Mapping  
3 credits
Offered By Announcement Only
Methods and techniques of cartography. Cartographic representation of spatial data.

GEG292 Jewish Geography  
3 credits
Spring Semester
Introduces basic concepts in world Jewish geography and the geography of American Jews.
PREREQUISITE: NONE

GEG301 Topics in Geography  
3 credits
Offered By Announcement Only
Content and prerequisites announced when offered. Course may be repeated for credit if content varies.

GEG304 World Economic Geography  
3 credits
Fall Semester
Geographic analysis of the distribution of economic activities with emphasis on present-day patterns and trends of production, distribution, and consumption of the world's major commodities.
PREREQUISITE: ANY 100 OR 200-LEVEL COURSE IN GEOGRAPHY.
GEG320 TOPICS IN CLIMATOLOGY; EXTREME WEATHER  
3 credits  
Spring Semester  
The fundamentals of atmospheric phenomena with an emphasis on understanding concepts and processes behind extreme manifestations of weather and climate. Topics covered include tornadoes, hurricanes, hailstorms, blizzards, floods.  
PREREQUISITE: GEG 120 OR INSTRUCTOR'S PERMISSION

GEG341 Geography of Population and Development  
3 credits  
Spring Semester  
Major world population issues are discussed, including population growth, fertility patterns, mortality change, migration, ethnicity, and population structure changes.  
PREREQUISITE: ANY 100 OR 200-LEVEL GEOGRAPHY COURSE.

GEG350 Gender Relations in Global Perspective: A Social and Economic Geography  
3 credits  
Fall Semester  
Comparative geographic analysis of gender (male and female) roles in their societies and associated issues.  
PREREQUISITE: ANY 100 OR 200 GEOGRAPHY COURSE.

GEG362 World Urban Geography  
3 credits  
Offered By Announcement Only  
An introduction to the principles and methods that apply to the geographic study of cities and urbanization.  
PREREQUISITE: ANY 100- OR 200-LEVEL GEOGRAPHY COURSE.

GEG370 Conservation of Resources  
3 credits  
Offered By Announcement Only  
Problems of resource availability in an urban-industrial society.  
PREREQUISITE: ANY 100 OR 200-LEVEL GEOGRAPHY COURSE.

GEG371 Environmental Geography: Current Issues  
3 credits  
Offered By Announcement Only  
Topics selected from a wide range of current environmental problems from a geographical perspective. Students will become familiar with a wide range of ecological processes as well as the human forces that currently modify them.  
PREREQUISITE: ONE COURSE IN EITHER PHYSICAL GEOGRAPHY OR ECOLOGY OR PERMISSION OF INSTRUCTOR.

GEG391 Intermediate GIS (Geographic Information Systems)  
3 credits  
Fall & Spring Semester  
This course deals with fundamental concepts of raster and vector data manipulation and analysis through lectures and laboratory exercises. Topics covered include vector polygon editing and topology, data quality assessment, integration of raster and vector data, basic concepts of remote sensing, cartographic modeling, suitability mapping, and multi-criteria evaluations.  
PREREQUISITE: GEG 199 OR PERMISSION OF INSTRUCTOR.

GEG392 Remote Sensing of the Environment  
3 credits  
Spring Semester  
Theory and techniques of environmental remote sensing and imagery interpretation for earth resources monitoring and management.  
PREREQUISITE: GEG 199 OR PERMISSION OF INSTRUCTOR.
GEG420 Geopolitics
3 credits
Analysis of contemporary global geopolitical issues.
PREREQUISITE: ANY 100- OR 200-LEVEL GEOGRAPHY COURSE.

GEG430 World Cities
3 credits
The role of major cities in the world economy and the social consequences of globalization for urban areas.
PREREQUISITE: ANY 100- OR 200- LEVEL GEG COURSE.

GEG471 Ecological Biogeography
3 credits
Survey in modern Biogeography, emphasizing ecological rather than evolutionary concepts; the distributions of species and factors that have influenced the organization of plant communities.
PREREQUISITE: ONE COURSE IN EITHER PHYSICAL GEOGRAPHY OR ECOLOGY OR PERMISSION OF INSTRUCTOR.

GEG481 Introduction to Quantitative Methods
3 credits
The use of basic methods or quantitative analysis in geographic research.
PREREQUISITE: GEOGRAPHY MAJOR OR MINOR AND MTH 101 OR EQUIVALENT.

GEG491 GIS and Environmental Modeling
3 credits
Creation, editing, management and display of spatial databases in ARC/INFO, a vector-based GIS (Geographic Information System).
PREREQUISITE: GEG 391 OR PERMISSION OF INSTRUCTOR.

GEG495 Advanced Seminar in Human Geography
3 credits
Seminar on development-related issues in South Asia.
PREREQUISITE: ANY 100 OR 200 LEVEL GEG COURSE.

GEG501 Place, Region, Nature
3 credits
Introductory seminar for Graduate students about geographic thought and geographical traditions.
PREREQUISITE: AT LEAST 6 CREDITS IN GEOGRAPHY OR PERMISSION FROM INSTRUCTOR.

GEG510 Survey Research in Geography
3 credits
The use of survey research including the choice of a survey mechanism, sampling, questionnaire design, survey logistics, survey analysis, and reporting of results.

GEG511 Field Studies in Geography
1-6 credits
One to six weeks of intensive geographic field studies outside the Miami area. Lectures will be given prior to departure. The locations and topics of study will vary.
PREREQUISITE: GEG 105 OR ANY 200-LEVEL GEOGRAPHY COURSE.
GEG515 Human Dimensions of Global Environmental Change
3 credits  Fall Semester
Explores the human dimensions of global environmental change using an interdisciplinary approach. The course is reading and writing intensive. Special attention is given to the central role that land-use/cover change plays in the larger realm of global environmental change.
PREREQUISITE: GEG 105 AND JUNIOR/SENIOR STANDING.

GEG520 Immigration to the United States
3 credits  Fall Semester
A description and analysis of current immigration patterns in the United States. PREREQUISITE: ANY 100 OR 200 LEVEL COURSE OR PERMISSION FROM INSTRUCTOR.

GEG521 Global Trade
3 credits  Offered By Announcement Only
Geographic analysis of the distribution of economic activities and capabilities, with emphasis on contemporary trade patterns and policies.

GEG522 Urbanization in the Developing World
3 credits  Spring Semester
Patterns and processes in large cities in the developing world are examined.
PREREQUISITE: ANY 100 OR 200 LEVEL COURSE IN GEOGRAPHY OR PERMISSION FROM INSTRUCTOR.

GEG523 Seminar in Urban Management
3 credits  Fall Semester
Identification of and responses to urban problems in large cities in European and Latin American metropolitan areas. Emphasis is on demographic, cultural/ethnic, service-provision, environmental, transportation, and land-use problems. Approach is via case studies, theory applications, and planning practicalities.

GEG525 Problems in Geography
1-6 credits  Fall & Spring Semester
Content and prerequisites announced when offered. Course may be repeated for credit if content varies.
PREREQUISITE: GEOGRAPHY GRADUATE STUDENT, MAJOR, OR MINOR ONLY.

GEG530 Resources and Society
3 credits  Offered By Announcement Only
This course examines the relations between human society and material nature from within a broad theoretical perspective, relating questions of science, culture, and technology to the politics and economics of natural resources, focusing particularly on water, food, and petroleum.
PREREQUISITE: 300-LEVEL COURSE IN HUMAN GEOGRAPHY OR PERMISSION OF INSTRUCTOR.

GEG535 Internship in Geography
1-4 credits  Fall & Spring Semester
Students are assigned to work for a local public or private agency.
PREREQUISITE: 15 CREDITS IN GEOGRAPHY AND PERMISSION OF DEPARTMENT.

GEG545 Special Topics
3 credits  Fall & Spring Semester
PREREQUISITE: NINE CREDITS IN GEOGRAPHY.
GEG552 Seminar on the Geography of South Florida
3 credits
Offered By Announcement Only
Human and physical geography of South Florida.
PREREQUISITE: NINE CREDITS IN GEOGRAPHY.

GEG555 Field Methods and Geospatial Analysis
3 credits
Fall & Spring Semester

GEG570 Gender and Development
3 credits
Offered By Announcement Only
Theoretical and empirical examination of gender and development processes through exploration of gender and development evolution as an academic discipline and application in development practice.
PREREQUISITE: GRADUATE STUDENTS OR PERMISSION OF INSTRUCTOR.

GEG580 Introductory Quantitative Methods for Geographical Analysis.
3 credits
Spring Semester
Basic quantitative methods for geographic analysis.
PREREQUISITE: GRADUATE STANDING

GEG582 Advanced Quantitative Methods
3 credits
Offered By Announcement Only
Continuation of GEG 481. The use of statistical methods and techniques in the solution of geographic research problems.
PREREQUISITE: GEG 481 OR GEG 580 OR PERMISSION OF INSTRUCTOR

GEG585 Advanced Catography
3 credits
Fall & Spring Semester

GEG591 Introduction to GIS (Geographic Information Systems) for graduate students
0-3 credits
Offered By Announcement Only
Overview of basic concepts in GIS (Geographic Information Systems) for students wishing to get graduate credit. This class involves a student project using GIS.

GEG592 Advanced Environmental Remote Sensing
3 credits
Fall & Spring Semester
PREREQUISITE: GEG 199 OR EQUIVALENT

GEG593 Intermediate GIS
3 credits
Fall & Spring Semester
PREREQUISITE: GEG 591 OR EQUIVALENT OR PERMISSION OF INSTRUCTOR

GEG594 GIS and Environmental Modeling
3 credits
Fall & Spring Semester
PREREQUISITE: GEG 391 OR EQUIVALENT

GEG595 Web GISd Seminar on South Asia
3 credits
Fall & Spring Semester
Seminar on development-related issues in South Asia.
PREREQUISITE: GEG 391 OR EQUIVALENT
GSC101 Origin and Evolution of Planet Earth  
3 credits  
Fall & Spring Semester  
The origin of the elements and the evolution of the universe. The formation and early evolution of the solar system. The differentiation of the earth into core, mantle, and crust. Origin of the oceans and atmosphere.

GSC102 Evolution of the Biosphere  
3 credits  
Fall & Spring Semester & Second Summer Session  
The physical basis of life. The origin, early evolution, history of life on Earth. Emphasis on major crises and innovations, including the evolution of modern man.

GSC103 Evolution of the Modern Earth's Environment  
3 credits  
Fall & Spring Semester & First Summer Session  

GSC104 The Coastal Environment of South Florida  
1 credit  
Offered By Announcement Only  
Lectures and excursions to the coastal environment and the Everglades.  
PREREQUISITE: NOT FOR MAJOR OR MINOR

GSC105 The Global Environment  
3 credits  
Fall Semester  
Ongoing problems in earth systems: global warming, ozone depletion, energy shortages, air and water pollution, radioactivity.

GSC106 Geological Influences on Society  
3 credits  
Spring Semester  

GSC107 Natural Disasters - Hollywood Vs. Reality  
3 credits  
Spring Semester  
This course will explore the causes, effects and societal responses to disasters. We will look at a variety of natural hazards and related disasters including flooding, volcanoes, landslides, earthquakes, hurricanes, tsunami and drought. Using excerpted segments of "disaster films" in conjunction with scientific treatments, we can identify the causes, frequency, consequences, risks, and public perceptions of natural hazards.  
PREREQUISITE: NONE

GSC110 The Earth System  
3 credits  
Fall & Spring Semester & First Summer Session  
Interactions among the major components of the Earth System - the geosphere, the hydrosphere, the atmosphere, and the biosphere. To be taken concurrently with GSC 114 lab section.

GSC111 Earth System History  
4 credits  
Fall & Spring Semester  
Earth History, beginning with earliest origins and surveying major steps in the evolution of the geosphere, atmosphere, hydrosphere, and biosphere.
GSC114 Marine Geology Lab/Field Study
2 credits  Fall & Spring Semester
PREREQUISITE: COREQUISITE. GSC 110.

GSC115 Environmental Geology Lab/Field Study
2 credits  Fall & Spring Semester & First & Second Summer Session
Minerals, rocks, sediments, soils, maps, imagery, fossils and paleoenvironmental reconstruction, methods for studying dynamics and human impact on surficial environments. Field introduction to environmental geology problems and methods. Co requisite: GSC 110 or 120.
PREREQUISITE: COREQUISITE GSC 110 OR 120.

GSC131 Volcanoes and Society
1 credit  Spring Semester
Impact of volcanoes on past and present human civilizations. Topics include the origin of volcanoes, types of volcanic hazards, impact of volcanoes on climate, beneficial aspects of volcanic eruptions, and historical examples.

GSC132 History of Life in the Universe
1 credit  Spring Semester

GSC133 Dinosaurs and Disasters
1 credit  Spring Semester
Examination of the biology, evolution and extinction of the dinosaurs.

GSC204 Environmental Statistics
3 credits  Fall & Spring Semester
This introductory course provides an overview of parametric and nonparametric statistics with an emphasis on applications in the analysis of environmental data. PREREQUISITE: MTH 103 OR HIGHER, PLUS SIX (6) CREDITS IN GSC.

GSC230 Reef Systems Through Time
3 credits  Spring Semester
Interacting geological, physical, chemical, biological, and climatic processes that define a reeval setting and system. Field trips included. PREREQUISITE: GSC 110, 111.

GSC231 Field Study of Reef Systems Through Time
2 credits  Spring Semester
GSC240 Introduction to Marine Geology
3 credits
Offered By Announcement Only
The principal marine geological environments of the world, their substrate, their sediments, their flora and fauna, and their evolution through time.
PREREQUISITE: GSC 110 OR PERMISSION OF INSTRUCTOR.

GSC260 Earth Materials
4 credits
Fall Semester
Physical and optical properties of common rock-forming minerals and their occurrence in igneous, metamorphic, sedimentary rocks, and ore deposits. Lecture, 3 hours; laboratory, 4 hours.
PREREQUISITE: GSC 110; PREREQUISITE OR COREQUISITE: CHM 111.

GSC301 Science and Human Affairs in the 20th Century
3 credits
Spring Semester
Scientific descriptions of the technologies arising in the 20th century, and the interactions between them and our civilization. Course will be divided into four parts: World War I, the interwar years, World War II, and the postwar years. Grades will be based on weekly quizzes, three hour-exams, and a final. An extra-credit term paper will be suggested.
PREREQUISITE: GSC 101.

GSC310 Microbes and the Environment
3 credits
Fall Semester
This course is designed to provide students in geology, biology and environmental science a fundamental understanding of the role microbes play in shaping the Earth and its environments as well as the basic principles and approaches to studying these interactions in both modern and ancient settings. The metabolic diversity displayed by microbial communities makes them an integral component of global elemental cycles. In this regard, microorganisms have shaped our planet over the past 4 billion years and continue to do so in a very prominent way. The goal of this course is to learn about microbial diversity and metabolism, and the ability of microbes to shape and influence the environment.
PREREQUISITE: GSC110/114, GSC 111 OR CONSENT OF INSTRUCTOR.

GSC311 Field Study of Volcanoes and Society
2 credits
Spring Semester
Field trip to Popocatepeti and surrounding sites near Mexico City. Nature and impact of explosive volcanic eruptions on prehistoric civilizations. Fee required.
PREREQUISITE: GSC 110 OR PERMISSION OF INSTRUCTOR. GSC 440 RECOMMENDED.

GSC360 Depositional and Diagenetic Systems
4 credits
Fall Semester
Sedimentary processes, sedimentology, and sedimentary diagenesis. Physical, biological and chemical sedimentation in Earth's surficial environments. Paleoenvironmental and diagenetic history reconstruction using petrologic, hand specimen, and field methods. Cyclicity in sedimentary systems. Lecture, 3 hours; field/laboratory, 3 hours.
PREREQUISITE: GSC 110.
GSC380 Paleontology and Stratigraphy
4 credits
Spring Semester
Biostratigraphy, paleoecology, taphonomy, micro- and macroevolutionary processes, and physical and chemical methods used for stratigraphic correlation. Major groups of invertebrate phyla comprising the bulk of the fossil record. Lecture, 3 hours; laboratory, 2 hours.
PREREQUISITE: GSC 111.

GSC401 Senior Internship
3 credits
Offered By Announcement Only
Field and laboratory studies conducted in conjunction with an approved academic environmental or industrial research laboratory or agency.
PREREQUISITE: 15 CREDITS IN GEOLOGICAL SCIENCES AND PERMISSION OF THE DEPARTMENT.

GSC410 Environmental Geochemistry
3 credits
Spring Semester
Natural distribution of the elements on earth, and how this is being changed. Radioactivity and energy, greenhouse warming and ozone depletion, water and waste and other environmental problems.
PREREQUISITE: GSC 110; CHM 111 OR PERMISSION FROM THE INSTRUCTOR.

GSC420 Geophysics
3 credits
Spring Semester
PREREQUISITE: PHY 205, & 206. OR PERMISSION OF INSTRUCTOR.

GSC440 Igneous and Metamorphic Petrology
4 credits
Fall Semester
Genesis and classification of igneous and metamorphic rocks, field relationships of rock assemblages, and results of recent laboratory investigations. Identification of common rock types in hand specimens and by thin-section and X-ray diffraction techniques. Lecture, 3 hours; laboratory, 3 hours.
PREREQUISITE: GSC 260.

GSC450 Sedimentology
4 credits
Offered By Announcement Only
Sedimentary environment and processes. The geochemistry, formation and diagenesis of sediments. The role of physical and biological factors, including tectonism and climate. Use of sediments in paleoenvironmental reconstructions. Genesis of sedimentary economic deposits, with special emphasis on the formation of petroleum. Lecture, 3 hours; laboratory, 2 hours.

GSC480 Structural Geology
4 credits
Spring Semester
Behavior of rock materials; analysis, description and classification of geologic folds, faults, joints; analysis of rock fabrics; tectonic and geologic history of continents and continental margins. Lecture, 2 hours; laboratory, 2 hours.
PREREQUISITE: GSC 440.
GSC482 Field Methods  
2 credits  
Spring Semester  
Field and laboratory exercises in mapping. Interpretation of aerial and satellite photographic; coring and laboratory meet two hours/week. Field portion is on alternate Saturdays plus four day trip to Appalachians or Caribbean.  
PREREQUISITE: GSC 110/114 AND GSC 111

GSC490 Senior Thesis  
3 credits  
Fall & Spring Semester & First & Second Summer Session  
Individual, original research of independent study supervised by a member of the Departmental faculty and concluded by formal thesis preparation, public oral defense and submission of the thesis to the Department.  
PREREQUISITE: 3.0 GPA IN MAJOR; PASS DEPARTMENTAL EXAMINATION AT CONCLUSION OF JUNIOR YEAR; PERMISSION OF THE DEPARTMENT.

GSC491 Senior Thesis  
3 credits  
Fall & Spring Semester & First & Second Summer Session  
Individual, original research of independent study supervised by a member of the Departmental faculty and concluded by formal thesis preparation, public oral defense and submission of the thesis to the Department.  
PREREQUISITE: 3.0 GPA IN MAJOR; PASS DEPARTMENTAL EXAMINATION AT CONCLUSION OF JUNIOR YEAR; PERMISSION OF THE DEPARTMENT.

GSC515 Applied Environmental Geology  
3 credits  
Spring Semester  
An advanced undergraduate/graduate course providing knowledge and methods for effective environmental site surveys, to be presented in a weekly 3-hour lecture and discussion. The course will cover policies and regulation including applied practice to comply with safe environmental conduct and valid assessment. Case study, best management practice, and appropriate field equipment and approaches will complement two one-day field trips associated with this course.  
PREREQUISITE: PERMISSION OF INSTRUCTOR OR DEPARTMENT CHAIR.

GSC520 Geology of Florida and the Caribbean  
3 credits  
Fall Semester  
The land and marine geologic history, the natural resources and geologic hazards of Florida and the Caribbean region.  
PREREQUISITE: GSC 110, 111, 260.

GSC540 Geophysics  
3 credits  
Spring Semester  
PREREQUISITE: PHY 205, 206.

GSC545 Introduction to Isotope and Nuclear Geology  
4 credits  
Offered By Announcement Only  
Radioactivity and particle counting. The geological time scale. Isotope fractionation in natural systems. Mass spectrometry and the measurements of relative isotopic abundances in the ocean, the atmosphere, and the solid earth. Lecture, 2 hours; laboratory, 4 hours.
GSC550 Hydrogeology
3 credits  Fall Semester
Movement of subterranean water. The mechanical, chemical and thermal interaction of water with porous solids, and the transport of energy and chemical constituents. The origin of porosity and permeability. The controls exerted on aquifers by the lithology, stratigraphy and structure of geologic deposits and formations.
PREREQUISITE: 8 CREDITS IN GEOLOGICAL SCIENCES AND PERMISSION OF INSTRUCTOR.

GSC555 Mathematical Methods for Geoscientists
3 credits  Fall Semester
Background mathematics needed to solve problems in the geosciences. Applications in tectonics, structural geology, geochemical systems, seismology and hydrology.
PREREQUISITE: MTH 112 OR 132, 211 OR 310, OR 312, AND PHY 206, OR EQUIVALENT.

GSC556 Complexity in Coastal Systems
4 credits  Offered By Announcement Only
Different aspects of the coastal system and their interactions using inquiry-based learning; will include remote sensing data as a tool for data analysis and visualization.
PREREQUISITE: SIX CREDITS IN BIOLOGY OR GEOLOGICAL SCIENCES.

GSC560 Colloquium - Current Topics in the Geosciences
1 credit  Fall Semester
Weekly presentations and discussions. Written and oral presentations required.
PREREQUISITE: SENIOR STANDING.

GSC561 Colloquium - Current Topics in the Geosciences
1 credit  Spring Semester
Weekly presentations and discussions. Written and oral presentations required.
PREREQUISITE: SENIOR STANDING.

GSC565 Fluxes of Energy and Matter in the Earth Systems
3 credits  Offered By Announcement Only
Transport phenomena, motions, and deformation in Earth Systems.
PREREQUISITE: GSC 110, 360.

GSC574 Special Studies
1-4 credits  Fall & Spring Semester & First & Second Summer Session
Students engaged in approved field and/or laboratory activities, such as work at sea or in the laboratory under supervision, may register for credit.
PREREQUISITE: PERMISSION OF DEPARTMENT.

GSC575 Special Studies
1-4 credits  Fall & Spring Semester & First & Second Summer Session
Students engaged in approved field and/or laboratory activities, such as work at sea or in the laboratory under supervision, may register for credit.
PREREQUISITE: PERMISSION OF DEPARTMENT.

GSC576 Special Studies
1-4 credits  Fall & Spring Semester & First & Second Summer Session
Students engaged in approved field and/or laboratory activities, such as work at sea or in the laboratory under supervision, may register for credit.
PREREQUISITE: PERMISSION OF DEPARTMENT.
GSC580 Summer Field Geology
4 credits
Spring Semester & First & Second Summer Session
An intensive four-week summer field laboratory study of modern geological processes and ancient rock sequences. Mapping, description and interpretation of rock and structural sequences, paleoenvironmental reconstruction, interpretation of tectonic history. Reports required. Touring course. Travel fee required.
PREREQUISITE: 18 CREDITS IN GEOLOGICAL SCIENCES AND/OR PERMISSION OF INSTRUCTOR.

GSC581 Summer Field Environmental Geology
2 credits
Spring Semester & First & Second Summer Session
Field evaluation of environmental geology problems in marine, coastal, wetland and terrestrial environments. Effects of human alteration of landscape, natural hazards, pollution of ground water, surface water and soils. Role of climate change on surficial environments. Reports required. Touring course. Travel fee required.
Co requisite: GSC 580.
PREREQUISITE: COREQUISITE GSC 580.

GSC582 Field Studies
1-4 credits
Offered By Announcement Only
Conducted field trips to selected geological sites in the United States and abroad.
Report required.
PREREQUISITE: GRADUATE OR ADVANCED UNDERGRADUATE STANDING AND PERMISSION OF DEPARTMENT.

GSC596 Research in Geology
1-4 credits
Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: PERMISSION OF INSTRUCTOR.

GERMAN
GER101 Elementary German I
3 credits
Fall & Spring Semester
Fundamental grammatical principles; exercises to develop a foundation for skills of listening, speaking, reading, and writing; introduction to German culture. Closed to native speakers.

GER102 Elementary German II
3 credits
Fall & Spring Semester
Continuation of GER 101. Closed to native speakers.
PREREQUISITE: GER 101 OR EQUIVALENT. CLOSED TO NATIVE SPEAKERS.

GER211 Intermediate German I
3 credits
Fall & Spring Semester
Continuation of GER 102, with special emphasis on essay writing.
PREREQUISITE: GER 102 OR EQUIVALENT. CLOSED TO NATIVE SPEAKERS.

GER212 Intermediate German II
3 credits
Fall & Spring Semester
Integrated grammar, writing, and conversation via content-based instruction. Diverse selection of readings: stories, plays, essays, interviews, other materials. Development of skills in a workshop format.
PREREQUISITE: GER 211 OR EQUIVALENT. CLOSED TO NATIVE SPEAKERS.
GER301 Advanced German Studies
3 credits
Fall Semester
Intensive preparation for further 300-level work through use of various genres of German-language texts (short stories, poems, plays, comics, essays). Development of critical reading and writing skills. Writing credit.
PREREQUISITE: GER 212 OR PERMISSION OF INSTRUCTOR

GER302 The Cultures of the German-Speaking World
3 credits
Offered By Announcement Only
Historical survey of German civilization; arts, letters, science, political and social institutions. Conducted in German. Collateral readings and reports.
PREREQUISITE: GER 212 OR EQUIVALENT.

GER310 Ger 310: German Studies in Translation
3 credits
Spring Semester
Topics in German literature, philosophy, history, etc. Readings and discussion in English. Development of critical reading and writing skills. Fulfills humanities literature requirement. Writing credit. Does not fulfill foreign language requirement. May not be used for German minor credit.
PREREQUISITE: ENG 106 AND ONE 200-LEVEL COURSE IN HUMANITIES OR SOCIAL SCIENCES.

GER321 Special Topics in German Studies
3 credits
Offered By Announcement Only
Intensive study of a special topic. May be repeated for credit when topic varies. May be used to fulfill the humanities literature requirement. Writing credit.
PREREQUISITE: GER 301.

GER363 Eighteenth-century German Studies
3 credits
Offered By Announcement Only
The Enlightenment and its aftermath. Examination of the arts, sciences, letters, and political and social institutions of eighteenth-century Germanophone areas. May be used to fulfill the humanities literature requirement. Writing credit.
PREREQUISITE: GER 301.

GER364 Nineteenth-Century German Studies
3 credits
Offered By Announcement Only
The concept 'German,' formation of the nation, and social unrest. Examination of the arts, sciences, letters, and political and social institutions of nineteenth-century Germanophone areas. May be used to fulfill the humanities literature requirement. Writing credit.
PREREQUISITE: GER 301.

GER365 Twentieth-Century German Studies
3 credits
Offered By Announcement Only
The second empire and the third Reich, the Weimar Republic, and the two Germanies. Examination of the arts, sciences, letters, and political and social institutions of twentieth-century Germanophone areas. May be used to fulfill the humanities literature requirement. Writing credit.
PREREQUISITE: GER 301.
GER370 The Holocaust in History, Film, and Memorial Culture
3 credits
Offered By Announcement Only
The course examines the representation of the Holocaust in historiography, film, and memorial culture. Readings will include texts by historians and writers such as Primo Levi, Raul Hilberg, Daniel Goldhagen, James Young and others; films will include, among others, Alain Resnais's NIGHT AND FOG, Claude Lanzmann's SHOAH, and Steven Spielberg's SCHINDLER'S LIST. Reading-and writing-intensive course with reading and discussions in English. In addition to daily/weekly homework assignments, an in-class midterm exam and a final, cumulative take-home exam, students will also complete an extended analytical term paper. Students will also be required to watch films outside of regularly scheduled class hours.
PREREQUISITE: SOPHOMORE STANDING OR PERMISSION OF INSTRUCTOR

GER400 Advanced German Conversation Contemporary German Politics & Society
3 credits
Fall Semester
The course examines the representation of the Holocaust in historiography, film, and memorial culture. Readings will include texts by historians and writers such as Primo Levi, Raul Hilberg, Daniel Goldhagen, James Young and others; films will include, among others, Alain Resnais' NIGHT AND FOG, Claude Lanzmann's SHOAH, and Steven Spielberg's SCHINDLER'S LIST. Readings and discussions in English. Students will be required to attend some film screenings outside our regularly scheduled class hours. German-language students who wish to take the course for German minor credit will meet an additional hour per week (day and time TBA)
PREREQUISITE: GER 212 OR PERMISSION OF INSTRUCTOR

GER432 Business and Diplomatic German
3 credits
Offered By Announcement Only
Commercial, economic, and technical terminology. Conversation and composition based on models of business interactions and correspondence directed to German-speaking countries and firms. Writing credit.
PREREQUISITE: GER 212.

GER442 Advanced Stylistics and Composition
3 credits
Spring Semester
PREREQUISITE: ONE 300-LEVEL GER COURSE

GER521 Advanced German Studies
3 credits
Offered By Announcement Only
German language, literature, culture of the 18th-20th centuries. Involves independent research. WRITING CREDIT May be repeated for credit if topic is different.
PREREQUISITE: GER 363, 364, OR 365.

GER522 Special Topics in German Literature
3 credits
Offered By Announcement Only
WRITING CREDIT. May be repeated for credit if topic is different.
PREREQUISITE: TWO COURSES ON THE 300-LEVEL; PERMISSION OF THE INSTRUCTOR.

GER566 German Literature of the Twentieth Century
3 credits
Offered By Announcement Only
WRITING CREDIT. Major literary movements: prose, poetry, and drama.
PREREQUISITE: GER 363 OR 364.
GER591 Directed Readings
1-3 credits                                           Offered By Announcement Only
PREREQUISITE: TWO 300-LEVEL COURSES AND PERMISSION OF THE INSTRUCTOR.

GER592 Directed Readings
1-3 credits                                           Offered By Announcement Only
PREREQUISITE: TWO 300-LEVEL COURSES AND PERMISSION OF THE INSTRUCTOR.

GER593 Directed Readings
1-3 credits                                           Offered By Announcement Only
PREREQUISITE: TWO 300-LEVEL COURSES AND PERMISSION OF THE INSTRUCTOR.

GER594 Senior Honors Thesis I
3 credits                                                    Fall & Spring Semester
Directed research for honors thesis.
PREREQUISITE: MUST HAVE COMPLETED AT LEAST NINE CREDITS AT THE 300-LEVEL OR ABOVE TOWARDS GERMAN MAJOR, MUST MEET ELIGIBILITY FOR HONORS IN GERMAN.

GER595 Senior Honors Thesis II
3 credits                                                    Fall & Spring Semester
Directed writing of honors thesis.
PREREQUISITE: GER 594.

GREEK
GRE101 Elementary Ancient Greek I
3 credits                                                             Fall Semester
Alphabet, pronunciation, accentuation, vocabulary, grammar, reading exercises, and written exercises.

GRE102 Elementary Ancient Greek II
3 credits                                                         Spring Semester
Continuation of GRE 101.
PREREQUISITE: GRE 101.

GRE201 INTERMEDIATE ANCIENT GREEK I
3 credits                                                    Fall Semester
Reading from classical and Hellenistic authors. Building on their knowledge of elementary Greek grammar, students move toward real fluency in reading ancient Greek, and the pleasure of encountering these great authors in their original language.
PREREQUISITE: GRE 102 OR PERMISSION OF THE INSTRUCTOR

GRE202 Intermediate Ancient Greek II
3 credits                                                    Fall & Spring Semester
Reading Ancient Greek poetry. Students will read selections from Homer's Odyssey and Iliad, with emphasis on the Homeric dialect, meter, and the oral tradition of these epics. Greek 202 prepares students for 300- and 400-level Ancient Greek poetry courses.
PREREQUISITE: GRE 201 AND PERMISSION OF THE INSTRUCTOR

GRE311 PLATO
3 credits                                                    Fall & Spring Semester
Reading of Plato's dialogues and letters with a view to syntax, the acquisition of vocabulary, and Plato's prose style and philosophical thought.
PREREQUISITE: GRE 201 OR PERMISSION OF THE INSTRUCTOR
GRE321 EURIPIDES
3 credits
Readings in the plays of Euripides, with an emphasis on syntax, vocabulary, dramaturgy, and the social role of tragedy in ancient Athenian culture.
PREREQUISITE: GRE 201 OR PERMISSION OF THE INSTRUCTOR

GRE401 Special Topics in Greek Literature
3 credits
Fall & Spring Semester & First & Second Summer Session
This course will address a specific author, topic, or text (appearing as a subtitle) Analogous to REL 404-409 courses. [This will vary each time the course is offered]
PREREQUISITE: GRE 201 OR PERMISSION OF THE INSTRUCTOR

GRE402 Special Topics in Greek Literature
3 credits
Fall & Spring Semester & First & Second Summer Session
This course will address a specific author, topic, or text (appearing as a subtitle) Analogous to REL 404-409 courses. [This will vary each time the course is offered]
PREREQUISITE: GRE 201 OR PERMISSION OF THE INSTRUCTOR

GRE403 Special Topics in Greek Literature
3 credits
Fall & Spring Semester & First & Second Summer Session
This course will address a specific author, topic, or text (appearing as a subtitle) Analogous to REL 404-409 courses. [This will vary each time the course is offered]
PREREQUISITE: GRE 201 OR PERMISSION OF THE INSTRUCTOR

GRE404 Special Projects in Ancient Greek Literature & Culture
3 credits
Fall & Spring Semester & First & Second Summer Session
This course will address a specific project in Classics (appearing as a subtitle) Analogous to REL 407-409 [This will vary each time the course is offered]
PREREQUISITE: GRE 201 OR PERMISSION OF THE INSTRUCTOR

GRE405 Special Projects in Ancient Greek Literature and Culture
3 credits
Fall & Spring Semester & First & Second Summer Session
This course will address a specific project in Classics (appearing as a subtitle). Analogous to REL 407-409.
PREREQUISITE: GRE 201 OR PERMISSION OF INSTRUCTOR

GRE406 Special Projects in Ancient Greek Literature and Culture
3 credits
Fall & Spring Semester & First & Second Summer Session
This course will address a specific project in Classics (appearing as a subtitle). Analogous to REL 407-409.
PREREQUISITE: GRE 201 OR PERMISSION OF INSTRUCTOR

GRE407 Supervised Reading in Classical Greek
3 credits
Fall & Spring Semester & First & Second Summer Session
Variable subject matter determined by instructor and student. Analogous to REL 401-403.
PREREQUISITE: GRE 201 OR PERMISSION OF INSTRUCTOR

GRE408 Supervised Reading in Classical Greek
3 credits
Fall & Spring Semester & First & Second Summer Session
Variable subject matter determined by instructor and student. Analogous to REL 401-403.
PREREQUISITE: GRE 201 OR PERMISSION OF INSTRUCTOR
**Greek**

**GRE409 Supervised Reading in Classical Greek**
3 credits  
Fall & Spring Semester & First & Second Summer Session  
Variable subject matter determined by instructor and student. Analogous to REL 401-403.  
PREREQUISITE: GRE 201 OR PERMISSION OF INSTRUCTOR

**GRE411 Homer**
3 credits  
Spring Semester  
Readings from the Iliad and/or Odyssey.  
PREREQUISITE: GRE 201 OR PERMISSION OF THE INSTRUCTOR

**GRE421 Greek Orators**
3 credits  
Fall Semester  
Readings from Lysias and Demosthenes.  
PREREQUISITE: GRE 201 OR PERMISSION OF THE INSTRUCTOR

**GRE422 Aristophanes**
3 credits  
Fall & Spring Semester  
PREREQUISITE: GRE 201

**GRE431 Greek Historians**
3 credits  
Fall Semester  
Readings from Herodotus and Thucydides.  
PREREQUISITE: GRE 201 OR PERMISSION OF THE INSTRUCTOR

**GRE491 Directed Readings**
1- 3 credits  
Fall & Spring Semester & First & Second Summer Session  
Content to be determined by faculty member and registering student(s)  
PREREQUISITE: SIX CREDITS IN CLASSICS OR PERMISSION OF INSTRUCTOR

**Haitian**

**HAI101 Elementary Haitian Creole I**
3 credits  
Fall Semester  
Development of basic listening, speaking, reading and writing skills; focus on conversation and the grammatical fundaments of Haitian Creole.

**HAI102 Elementary Haitian Creole II**
3 credits  
Spring Semester  
PREREQUISITE: HAI 101 OR ITS EQUIVALENT

**HAI201 Intermediate Haitian Creole I**
3 credits  
Fall Semester  
PREREQUISITE: HAI 102 OR EQUIVALENT

**Hebrew**

**HEB101 Elementary Hebrew I**
3 credits  
Fall Semester  
Grammatical principles: reading for comprehension and conversation; oral and written exercises. Normally, closed to students who have completed two years of high school Hebrew. Closed to native speakers.  
PREREQUISITE: CLOSED TO NATIVE SPEAKERS.

**HEB102 Elementary Hebrew II**
3 credits  
Spring Semester  
Continuation of HEB 101. Closed to native speakers.  
PREREQUISITE: HEB 101 OR EQUIVALENT, AND CLOSED TO NATIVE SPEAKERS.
HEB201 Intermediate Hebrew I
3 credits  Fall Semester
PREREQUISITE: HEB 102 OR 4 YEARS OF HIGH SCHOOL HEBREW OR PERMISSION OF INSTRUCTOR, AND CLOSED TO NATIVE SPEAKERS.

HEB202 Intermediate Hebrew II
3 credits  Spring Semester
Continuation of 201 with oral presentations, compositions, and grammar review. Class conducted in Hebrew. Closed to native speakers.
PREREQUISITE: HEB 201 OR EQUIVALENT, AND CLOSED TO NATIVE SPEAKERS.

HEB243 Hebrew for Native Speakers
3 credits  Fall & Spring Semester
Grammar, morphology, syntax, and semantics of Modern Hebrew based on texts and media that expose the student to a multi-faceted experience of Hebrew language and culture.
PREREQUISITE: FOR NATIVE AND HERITAGE SPEAKERS WITH SOME FORMAL TRAINING IN MODERN HEBREW (SUCH AS AN "ULPAN" IN ISRAEL OR CONSISTENT STUDY OF HEBREW IN A JEWISH HIGH SCHOOL) OR PERMISSION OF INSTRUCTOR.

HISTORY

HIS101 History of the United States, I (to 1877)
0- 3 credits  Fall & Spring Semester
Political, social, and economic development of the United States through Reconstruction.

HIS102 History of the United States, II (since 1877)
0- 3 credits  Fall & Spring Semester
Political, social, and economic development of the United States since Reconstruction.

HIS121 Development of Asian Civilizations, I
3 credits  Fall Semester
Evolution of the principal Asian civilizations to 1600.

HIS122 Development of Asian Civilizations, II
3 credits  Offered By Announcement Only
The principal Asian civilizations since 1600 emphasizing the breakdown of traditional societies and the rise of modern nations.

HIS131 Development of Western Civilization, I
0- 3 credits  Fall & Spring Semester
A survey of the development of the West from the emergence of the earliest civilizations in Mesopotamia and Egypt to the formation of modern European nation states in the sixteenth and seventeenth centuries, emphasizing the ideas, values, events, and institutions that have influenced the present.

HIS132 Development of Western Civilization, II
0- 3 credits  Fall & Spring Semester
A survey of the development of the West from the formation of modern European nation states in the sixteenth and seventeenth centuries to the present, emphasizing the rivalry of European powers, the impact of European expansion, the effect of industrialism and revolution upon Western society, and the role of the New World.
HIS161 History of Latin America, I (to 1824)
3 credits  Fall Semester
A survey of Spanish and Portuguese America from the pre-Columbian era through the end of the colonial period.

HIS162 History of Latin America, II (since 1824)
3 credits  Spring Semester
A survey of the national period in Latin American history, emphasizing the political and social issues in the transition from colonialism to nationhood.

HIS201 History of Africa, I (to 1800)
3 credits  Offered By Announcement Only
History of Africa before the Colonial period, emphasizing sources for the study of African history, African political and social institutions, the slave trade, and "legitimate" trade and markets.

HIS202 History of Africa, II (since 1800)
3 credits  Spring Semester
The emergence of modern Africa from about 1800 to the present, emphasizing the European conquest of Africa, African responses to colonialism, independence and the post-independence period.

HIS209 African-American History to 1877
3 credits  Fall Semester

HIS210 African-American History, 1877-PRESENT
3 credits  Spring Semester
History of people of African descent in the United States from 1877 to present.

HIS211 Epics, Gods, Kings: Pre-Mofern India 2500 B.C.E. to 1600 A.D.
3 credits  Fall Semester
History of the principal Asian societies to approximately 1600, emphasizing China and Japan.

HIS220 History of European Sexuality
3 credits  Fall & Spring Semester
The history of European sexuality from the Greeks to the present day.

HIS223 Medicine and Society in the West
3 credits  Offered By Announcement Only
This course analyzes the history of medicine in the western world from its beginnings to 1800.

HIS224 The History of Modern Medicine
3 credits  Offered By Announcement Only
This course examines the history of medicine from the late 18th century until the end of the twentieth century. During the semester, students will consider a variety of different approaches that seek to place "the rise of modern medicine" in broader historical, social, and cultural contexts.
HIS225 History of the Modern Business Enterprise
3 credits Offered By Announcement Only
This course examines the history of big business in the nineteenth and twentieth centuries. Drawing often on individual firm histories, its focus will be a comparative study of the big business experience in America, Europe, Asia, and the imperial world.

HIS226 The World in the Twentieth Century
3 credits Offered By Announcement Only
Survey of twentieth century international history with a focus on the main political, social, and economic trends.

HIS227 Nationalism: Love Thy Brother, Hate Thy Neighbor?
3 credits Fall & Spring Semester
Thematic overview to the ideas and politics of nationalism throughout the globe. Lectures focus on case studies from different eras and different continents with the goal of showing the historical context of nationhood.

HIS228 Holy War and Toleration in Western Religious Traditions
3 credits Spring Semester
An exploration of concepts of Holy War and Just War and of traditions of tolerance and intolerance in Judaism, Christianity, and Islam, from ancient times to the present.

HIS229 Consumer Society: A Global History
3 credits Spring Semester

HIS240 Europe's Great Revolutions: A Comparative Study of the Eng French Russian Revol
3 credits Fall & Spring Semester & First & Second Summer Session
This course examines and compares the three revolutions that have shaped the modern Western world: The Puritan Revolt in 17th-century England, the French Revolution of 1789, and the Russian (Communist) Revolution of 1917. Each of these events was of course historically distinct, but there are discernible parallels as well. This course explores their intellectual, social, economic, and political causes and consequence in a comparative context.

HIS246 Origins and History of the Russian Revolution
3 credits Offered By Announcement Only

HIS253 History of Mexico: Guns and Tortillas, or, How Mexico Became Mexican
3 credits Offered By Announcement Only
Culture and ideology of the Mexican Revolution.

HIS254 History of the Cold War in the Americas.
3 credits Fall Semester

HIS261 Women's America I (Nineteenth Century)
3 credits Fall Semester
Political, social, and economic development of the United States through Reconstruction.

HIS262 Women's America II (Twentieth Century)
3 credits Spring Semester
Political, social, and economic development of the United States since Reconstruction.
HIS265 Witchcraft in Colonial America
3 credits Offered By Announcement Only
Exploration of witch beliefs and witch-hunting in colonial America, incorporating religious, cultural, gendered, psychological, political, legal, social, and economic perspectives.

HIS271 American Political History Since 1960: Policy, Public History, and Modern Media
3 credits Offered By Announcement Only

HIS284 The Second World War.
3 credits Offered By Announcement Only
The Second World War: Analysis of its origins, the military and political course of events, and its consequences, such as the cold war.

HIS285 The origins and history of the Third Reich.
3 credits Offered By Announcement Only

HIS290 The Beach: The Beach as Place, Space and Event in World Historical Context
3 credits Fall Semester

HIS296 Special Topics
3 credits Fall & Spring Semester & First & Second Summer Session
Content varies by semester and is indicated parenthetically following course title in class schedules.

HIS297 History Internship
3 credits Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR

HIS306 The Modern Near East
3 credits Offered By Announcement Only
The Near East since 1453, emphasizing the Ottoman Empire, Arab nationalism and Zionism, the Mandate System, and the Arab-Israeli conflict.
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS308 West Africa since 1000 A.D.
3 credits Offered By Announcement Only
The Sudanic empires, the spread of Islam, the slave and legitimate trades, the establishment of European colonies, and the struggle for independence.
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS309 History of Southern Africa
3 credits Offered By Announcement Only
The establishment of the Dutch settlements and the apartheid system, African responses to European domination, and the collapse of apartheid and the emergence of a multi-racial South Africa.
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS310 Africa in Cuba/Cuba in Africa: Slave Trade to Cuban Internationalist Missions i
3 credits Offered By Announcement Only
The relationship between Cuba and Africa from the period of the slave trade to the late 1990s.
PREREQUISITE: THREE CREDITS IN HISTORY
HIS311 Gandhi and the making of Modern India  
3 credits  
Fall Semester  
An analysis of slavery, agrarianism, segregation, and other major themes in the development of the American South from 1815 to recent times.

HIS315 Imperial China  
3 credits  
Offered By Announcement Only  
History of China from the origins of Chinese civilization to 1798.

HIS316 Modern China  
3 credits  
Offered By Announcement Only  
History of China since 1798.

HIS317 History of the Caribbean, I  
3 credits  
Offered By Announcement Only  
Caribbean history major topics, debates, and themes from the fifteenth to early nineteenth centuries; the centrality of the Caribbean to larger world histories of conquest, colonialism, slavery and emancipation, capitalism, migration, religious transformation, republicanism, and nation-state formation.

HIS318 Modern Caribbean History  
3 credits  
Fall & Spring Semester  
Major topics, debates, and themes in Caribbean history from the late eighteenth century to the present.

HIS321 The Greek World  
3 credits  
Offered By Announcement Only  
Greek civilization from the Late Bronze Age to the end of Greek independence at the battle of Chaeronea in 338 B.C.  
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS324 Roman Empire  
3 credits  
Offered By Announcement Only  
Roman Civilization from the reign of Augustus in 27 BC to the Fall of Rome in AD 476.  
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS325 The Early Middle Ages: Europe, 450-1095  
3 credits  
Offered By Announcement Only  
Western historical development from the collapse of the classical ancient world to Europe's emergence as a distinct and viable civilization.

HIS326 The High and Late Middle Ages: Europe 1095-1500  
3 credits  
Offered By Announcement Only  
The mature medieval civilization and its transformation.

HIS327 The Renaissance in Florence  
3 credits  
Offered By Announcement Only  
Cultural, social, economic, religious, and political life in Florence from the time of Dante to Machiavelli, as a window onto broader developments in Renaissance Europe.  
PREREQUISITE: THREE CREDITS IN HISTORY.
HIS328 Reformation Europe
3 credits
Offered By Announcement Only
The religious, political, cultural, social, and economic forces which produced a schism in 16th-century Western Christendom. Note: May be taken for credit in only one department as REL 348 or HIS 328.

HIS329 Renaissance Humanism
3 credits
Offered By Announcement Only
A movement that affected major Renaissance figures from Petrarch to Machiavelli and Erasmus. Emphasis on Education, Ethics, Literature, Religion and relationships with society.
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS330 The Scientific Revolution
3 credits
Offered By Announcement Only
Transition between medieval science and Newtonian physics, focusing on sixteenth- and seventeenth-century developments in medicine, cosmology, physics, and scientific method.
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS331 England to the Accession of the Tudor Dynasty (to 1485)
3 credits
Offered By Announcement Only
The formation of the English people and their growth to national unity and maturity.

HIS332 England, 1485-1688
3 credits
Offered By Announcement Only
The crisis of the English Constitution and the formation of the British Empire.

HIS333 England and the Empire in the Age of Queen Victoria (1815-1901)
3 credits
Offered By Announcement Only
Victorian Britain, emphasizing the manners, politics, and empire building, and the exploitation and humanitarianism of the century of Pax Britannica.
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS334 Britain and the Commonwealth in the Twentieth Century
3 credits
Offered By Announcement Only
The challenges and changes in Britain and its overseas dominions in the century of total war.
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS335 The French Revolution and Napoleon (1789-1815)
3 credits
Offered By Announcement Only
An analysis of French history from the Revolution to the collapse of the Napoleonic Empire, stressing the passing of feudalism in France.
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS336 Modern French History
3 credits
Offered By Announcement Only
This course covers the political, social, cultural, economic, and military history of France since 1870. Major themes include power and decline, the weight of historical memories, issues of French identity, and the central role of the French state.
HIS337 Modern European Jewish History
3 credits Offered By Announcement Only
Jewish history in Europe since 1789, emphasizing the effects of the Enlightenment, nationalism and Nazism, Jewish life in Western Europe and in the communist bloc, and the impact of Israel.
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS338 The Holocaust in Historical Perspective
3 credits Offered By Announcement Only
The evolution and implementation of the theory of racialism in imperial Germany and the Third Reich.
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS339 Germany from the Reformation to 1815
3 credits Offered By Announcement Only
German history from the Reformation through the reorganization of the German states after the Napoleonic Wars (1815) with emphasis on the federal character of early modern Germany, religion, and topics of social and economic change.

HIS340 History of Modern Germany since 1815
3 credits Offered By Announcement Only
German history since 1815 concentrating on the political and social history of the German Empire, Germany's role in World War I, the Weimar Republic and the rise of Hitler, Nazi Germany, and developments since 1945.
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS342 Europe between the Versailles Treaty and the Cold War.
3 credits Offered By Announcement Only
A study of European history since World War I, giving special attention to contemporary economic, social, political, and international problems.
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS343 Ages of Gold and Silver: An Economic and Social History of Europe, 1450-1750
3 credits Offered By Announcement Only
Economic and social history of Europe in the early modern period. Writing intensive course.
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS344 Medieval Russia
3 credits Offered By Announcement Only
Domestic political, economic, social and religious developments, and foreign policies from the foundation to Kievan Rus' through the Mongol era and the formation of Muscovy to the end of Riurikid rule in the late 16th century.
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS345 Early Modern Russia
3 credits Offered By Announcement Only
The transition from Muscovy to Imperial Russia. Domestic political, social, economic and cultural issues, and foreign affairs will be examined with emphasis on Western influences and reactions to them during the first two centuries of Romanov rule (17th and 18th centuries).
PREREQUISITE: THREE CREDITS IN HISTORY.
HIS346 Imperial Russia
3 credits Offered By Announcement Only
Domestic political, social, economic and cultural developments, and foreign affairs in Russia from the beginning of the 19th century to the Russian Revolution of 1917.
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS347 Soviet Union and Post-Soviet Russia
3 credits Offered By Announcement Only
The Soviet Union from the Russian Revolution (1917) to the disintegration of the USSR (1991), and the post-Soviet period to the present.
PREREQUISITE: SIX CREDITS IN HISTORY.

HIS348 Europe in the Age of Hitler and Stalin
3 credits Offered By Announcement Only
This course covers European history between 1914 and 1945. Principal topics include the experience of two world wars, the rise of fascism and communism, the challenge of democracy, and the failure to secure a lasting peace.

HIS349 European Diplomatic History from Bismarck to the Cold War
3 credits Offered By Announcement Only
European Diplomatic History from the Revolutions of 1848 to the Cold War period.
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS350 Europe and the World in Modern Times
3 credits Offered By Announcement Only
This course examines European relations with the wider world over the past several centuries. It combines the perspectives of the history of European exploration and expansion, imperialism and decolonization, global transport and trade, world wars, and globalization.
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS351 Science and Society
3 credits Offered By Announcement Only
Historical continuities and changes in Maya culture, economy, and politics from the classic period to contemporary times.
PREREQUISITE: PHI 241

HIS352 The Inquisition
3 credits Offered By Announcement Only

HIS353 History of Cuba
3 credits Offered By Announcement Only
The development of the Cuban nation, emphasizing the nineteenth and twentieth centuries and the Castro revolution. This course will concentrate on studying "Cuba After Castro". We will analyze various scenarios for "change" and what implications these will have for the next administration in Washington DC as well as in other parts of the world.
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS354 Latin America's Urban Explosion: 1900-2010
3 credits Spring Semester
Major topics, debates, and themes in Caribbean history from the fifteenth to the late eighteenth Century.
PREREQUISITE: THREE CREDITS IN HISTORY.
HIS355 Modern Brazil  
3 credits  
Offered By Announcement Only  
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS356 History of Argentina’s Civilization, Barbarism, and Power.  
3 credits  
Fall & Spring Semester  
This course offers a survey of the history of Argentina since colonial times.

HIS357 Social History of Latin America  
3 credits  
Offered By Announcement Only  
Demographic changes, race and ethnic relations, immigration, and urbanization.  
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS358 Gender and Sexuality in Latin America  
3 credits  
Offered By Announcement Only  
Latin American History from colonial times to the present day using gender as a central category of historical analysis.

HIS359 Caribbean Intellectual History  
3 credits  
Fall Semester  
Nineteenth and twentieth-century Caribbean political and social thought. Connects the history of ideas to the history of social movements in the region. Links international, intellectual, political and artistic currents.  
PREREQUISITE: 3 CREDITS IN HISTORY.

HIS360 Modern Latin America Through Film  
3 credits  
Fall & Spring Semester  
Analysis of films with regard to their historical value and their impact on forming historical perceptions about modern Latin America.  
PREREQUISITE: 3 CREDITS IN HISTORY.

HIS361 American Colonial History (1607-1763)  
3 credits  
Offered By Announcement Only  
History of the British mainland colonies from the establishment of Jamestown to the end of the French and Indian War.

HIS362 The American Revolution (1763-1783)  
3 credits  
Offered By Announcement Only  
The political, social, and constitutional issues that culminated in the Declaration of Independence, and the achievement of American nationhood.

HIS363 The Early Republic (1783-1850)  
3 credits  
Offered By Announcement Only  
A study of the constitutional, political, territorial, economic, and social development of the United States from the end of the American Revolution to the Compromise of 1850.

HIS364 Civil War and Reconstruction (1850–1877)  
3 credits  
Offered By Announcement Only  
A study of the origins of the American Civil War, emphasizing the economic, political and social, as well as military aspects of the conflict, and the course and consequence of the Reconstruction period.
HIS365 Emergence of Modern America (1877-1917)  
3 credits  
Offered By Announcement Only  
United States from the end of Reconstruction to the First World War.  
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS366 America in Crisis (1917-1945)  
3 credits  
Offered By Announcement Only  
The United States from World War I through World War II.  
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS367 Contemporary America  
3 credits  
Offered By Announcement Only  
The United States since World War II.  
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS368 Nature and the Environment in American History  
3 credits  
Offered By Announcement Only  
Shifting attitudes toward nature and the environment in American history; the rise  
of environmentalism and changes in public policy related to environmental conservation  
and preservation.

HIS369 Introduction to Urban America  
3 credits  
Offered By Announcement Only  
The changing role of the city in American history. The built environment. The interaction  
of the built environment and the lives of residents.

HIS371 Immigration, Race and Ethnicity in American History  
3 credits  
Offered By Announcement Only  
Migration and immigration in 19th- and 20th-century in the United States. How Americans  
have understood themselves as part of a multicultural society, and how ethnic and  
racial identities have been defined throughout American history.

HIS372 The Sixties  
3 credits  
Offered By Announcement Only  
History of people of African descent in the United States from African roots to  
1896. Prerequisite: Three credits in history.

HIS373 The Civil Rights Movement  
3 credits  
Offered By Announcement Only  
History of people of African descent in the United States from 1896 to the present.  
Prerequisite: Three credits in history.

HIS374 History of American Women  
3 credits  
Offered By Announcement Only  
The history of women in the United States from the colonial period to the present,  
focusing on the contrasts between women's public and private lives and the three  
waves of feminism.  
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS375 Gender, Sex, and Sexuality in Early America  
3 credits  
Offered By Announcement Only  
Gender ideologies, gender relations, family life, attitudes toward sex, sexual  
behavior, and the regulation of sex in early America (1607-1800).
HIS376 American Legal and Constitutional History  
3 credits  
Offered By Announcement Only  
The development of legal thought and practice in the context of American politics, economy and ideology during the twentieth century. Special consideration will be given to social movements and their treatment under the rule of law.

HIS377 Sport in American History  
3 credits  
Offered By Announcement Only  
The role of sport in American culture. Sports relation to urban growth, professionalism, ethnic identity and assimilation, nationalism, and consumption.

HIS378 Early American Religious History (1607-1800)  
3 credits  
Spring Semester  
Religious beliefs and practices during the seventeenth and eighteenth centuries in the British colonies that became the United States, emphasizing the diversity of religious culture in Early America.  
PREREQUISITE: 3 CREDITS IN HISTORY

HIS379 History of the Old South (1607-1861)  
3 credits  
Offered By Announcement Only  
The American South from Jamestown to secession, emphasizing the development of plantation society, the rise of internal and external conflict, and the shaping of the idea of the "Old" South.

HIS380 The New South (since 1877)  
3 credits  
Offered By Announcement Only  
History of the U.S. South from "Redemption" to the present, emphasizing Populism, Progressivism, the idea of a "New" South, and the civil rights movement.  
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS381 History of Florida  
3 credits  
Offered By Announcement Only  
Florida from its discovery, exploration, and colonization to the present.  
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS382 Ideas and Culture in Early American History  
3 credits  
Offered By Announcement Only  
Intellectual and cultural history in America from the colonial period to the Civil War, focusing on developments in religion, philosophy, political and social theory, and the arts.

HIS383 Ideas and Culture in Modern United States History  
3 credits  
Offered By Announcement Only  
Intellectual and cultural history in the United States from 1865 to the present day, focusing on developments in philosophy, science, political theory, social criticism, and the arts.

HIS385 The Growth of the American Empire  
3 credits  
Offered By Announcement Only  
Diplomatic history of the United States from the American Revolution to the present, focusing on the ideology and perceptions accompanying America's rise to world power.  
PREREQUISITE: THREE CREDITS IN HISTORY.
HIS386 History of U.S. Relations with Latin America
3 credits Offered By Announcement Only
A study of U.S. policy toward Latin America from the early 1800s to the present, emphasizing the roles of economics, territorial expansion, ideology, and race.
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS387 American Military History
3 credits Offered By Announcement Only
The military history of the United States from the colonial period to the present, emphasizing the development of the armed forces, their operations in wartime, and their interaction with American society.
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS388 The Vietnam War
3 credits Offered By Announcement Only
U.S. involvement in Vietnam from 1945 to 1973, emphasizing the diplomatic and military components.
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS389 Nineteenth-Century Europe: Barricades, Borders and Bourgeoisie
3 credits Fall Semester
Survey of 19th Century Europe from the French Revolution to World War I, focusing on political and cultural history.
PREREQUISITE: 3 CREDITS IN HISTORY.

HIS390 Europe after Hitler
3 credits Offered By Announcement Only
Survey of European History from the end of World War II, focusing on political and cultural developments.
PREREQUISITE: THREE (3) CREDITS IN HISTORY.

HIS391 The History of Everyday Life
3 credits Fall & Spring Semester & First & Second Summer Session
The History of everyday life in early modern Europe (ca. 1500-1700). We will study how Europeans experienced and made sense of their environment, their communities, relationships, time, the self, the stages of life, food, drugs, work, and recreation.

HIS395 World War I
3 credits Offered By Announcement Only
The military and political history of the First World War (1914-1918), beginning with a survey of military and naval developments in the early 20th Century and the diplomatic background of the war.
PREREQUISITE: THREE CREDITS IN HISTORY.

HIS396 Special Topics
3 credits Fall & Spring Semester & First & Second Summer Session
Content varies by semester and is indicated parenthetically following course title in class schedules.

HIS397 History Internship
3 credits Offered By Announcement Only
Principle political, social, and economic currents in the world since 1914, emphasizing the international aspects of history. Prerequisite: Three credits in history.
PREREQUISITE: PERMISSION OF INSTRUCTOR
HIS401 Directed Readings in African History
1-3 credits
Fall & Spring Semester
PREREQUISITE: PERMISSION OF INSTRUCTOR.

HIS411 Directed Readings in Asian History
1-3 credits
Fall & Spring Semester
PREREQUISITE: PERMISSION OF INSTRUCTOR.

HIS421 Directed Readings in European History
1-3 credits
Fall & Spring Semester
PREREQUISITE: PERMISSION OF INSTRUCTOR.

HIS451 Directed Readings in Latin-American History
1-3 credits
Fall & Spring Semester
PREREQUISITE: PERMISSION OF INSTRUCTOR.

HIS461 Directed Readings in United States History
1-3 credits
Fall & Spring Semester
PREREQUISITE: PERMISSION OF INSTRUCTOR.

HIS491 Directed Readings in Comparative History
1-3 credits
Fall & Spring Semester
PREREQUISITE: PERMISSION OF INSTRUCTOR.

HIS501 Studies in African History
3 credits
Offered By Announcement Only
Selected topics in African history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS511 Studies in Asian History
3 credits
Offered By Announcement Only
Selected topics in Asian history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS515 Studies in Chinese History
3 credits
Offered By Announcement Only
Selected topics in Chinese history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS531 Studies in European History
3 credits
Offered By Announcement Only
Selected topics in European history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS534 Studies in Ancient History
3 credits
Offered By Announcement Only
Selected topics in Ancient history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.
HIS536 Studies in Medieval History
3 credits  Offered By Announcement Only
Selected topics in Medieval history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS538 Studies in Early Modern European History
3 credits  Offered By Announcement Only
Selected topics in European history before the French Revolution. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS544 Studies in Modern European History
3 credits  Offered By Announcement Only
Selected topics in European history after the French Revolution. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS551 Studies in Latin American History
3 credits  Offered By Announcement Only
Selected topics in Latin-American history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS553 Studies in Colonial Latin American History
3 credits  Offered By Announcement Only
Selected topics in the colonial period of Latin-American history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS554 Studies in Modern Latin American History
3 credits  Offered By Announcement Only
Selected topics in Latin-American history before and after Independence. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS561 Studies in United States History
3 credits  Offered By Announcement Only
Selected topics in United States history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS564 Studies in American Intellectual and Cultural History
3 credits  Offered By Announcement Only
Selected topics in American intellectual and cultural history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.
HIS565 Studies in American Political and Diplomatic History
3 credits
Offered By Announcement Only
Selected topics in American political and diplomatic history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS569 Studies in African-American History
3 credits
Offered By Announcement Only
Selected topics in African-American history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS570 Studies in Public History
3 credits
Offered By Announcement Only
Selected topics in public history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS591 Studies in Comparative History
3 credits
Offered By Announcement Only
Selected topics in Comparative History. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS595 Studies in Visual History
3 credits
Offered By Announcement Only
Selected topics in the use of photographs and other visual evidence for historical purposes. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS599 Independent Research
3 credits
Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR.

INTERNATIONAL STUDIES

INS101 Global Perspectives
3 credits
Fall & Spring Semester
Introduces students to the study of international relations focusing on the continuing threat of national and ethnic conflict; terrorism; environmental and health concerns; globalization; economic interdependence, and poverty. Students are provided an overview of the evolution of international affairs in the modern era and are introduced to the various scholarly approaches for an understanding of international affairs.

INS102 Global Economics
3 credits
Fall & Spring Semester
The international economy. This course develops the analytical tools underlying "the economic way of thinking" and applies them to two main topics: the environment and international trade.

INS104 Global Perspectives Discussion Section
0 credit
Fall & Spring Semester

INS105 Global Perspectives Discussion Section 2
0 credit
Fall & Spring Semester
COLLEGE OF ARTS AND SCIENCES
INTERNATIONAL STUDIES

INS201 Globalization and Change in World Politics
3 credits
Fall & Spring Semester
The academic and public policy debates regarding the multiple impacts of the globalization of the world economy on the politics of nation-states and on the dynamics of the international system itself.
PREREQUISITE: INS 101 OR PERMISSION OF INSTRUCTOR.

INS202 INS Methodology
3 credits
Spring Semester
The approaches, methods and techniques used for designing and conducting international studies research.

INS302 Chile: Politics and Society
3 credits
Offered By Announcement Only
This course serves as an introduction to the main issues in Chilean politics and society at the start of the 21st century. It also approaches the ways in which those issues may be analytically addressed from the standpoint of social and political science.

INS310 Advanced Topics in INS
3 credits
Offered By Announcement Only
PREREQUISITE: INS 201 OR POL 212 OR PERMISSION OF INSTRUCTOR.

INS311 Advanced Topics in INS II
3 credits
Offered By Announcement Only
PREREQUISITE: INS 201 OR POL 212 OR PERMISSION OF INSTRUCTOR.

INS320 Global Economics II
3 credits
Offered By Announcement Only
Macroeconomics and its application to the study of the international economy. Measurement of income and level of development; determinants of economic growth; inflation and unemployment; open economy macroeconomics.
PREREQUISITE: INS 102 OR ECON 211 AND 212, OR PERMISSION OF INSTRUCTOR.

INS321 Global Political Economy
3 credits
Offered By Announcement Only
The implications of the globalization of trade, production, finance, and culture on equity, social welfare and the quality of democratic institutions and practices in both the Global North and the Global South.
PREREQUISITE: INS 102 OR ECON 211 AND 212, OR PERMISSION OF INSTRUCTOR.

INS322 Economics of Development and the Environment
3 credits
Fall Semester
Structural changes that accompany economic growth that impact the environment and sustainable development.
PREREQUISITE: INS 102 OR ECON 211 AND 212, OR PERMISSION OF INSTRUCTOR.

INS330 Introduction of Comparative Studies
3 credits
Offered By Announcement Only
Introduces students to the comparative method and to the theories and concepts required to analyze political transformation of states, societies, economies and culture in a globalization world.
PREREQUISITE: INS 201 OR POL 212 OR PERMISSION OF INSTRUCTOR.
INS335 Democratization
3 credits
Spring Semester
A comparative overview of the problems of introducing democratic and market economic institutions into areas where they have not flourished and how to maintain them in established democracies.
PREREQUISITE: INS 201 OR POL 212 OR PERMISSION OF INSTRUCTOR.

INS341 Nationalism, Ethnicity and Conflict
3 credits
Fall Semester
Examines theories of ethnic and national conflict focusing on contemporary issues throughout the world.
PREREQUISITE: INS 201 OR POL 212 OR PERMISSION OF INSTRUCTOR.

INS344 Gender and Politics
3 credits
Fall Semester
Compares the roles played by men and women in political systems worldwide; examines public policy outcomes with significant gender-based effects, including policies on sexuality & reproductive health, gender-based violence, work & the family, and access to education.
PREREQUISITE: POL 202

INS352 Panoramic View of the Middle East
3 credits
Fall Semester
The Middle East and a basic understanding of the factors, forces and processes shaping developments in the modern and contemporary history of this important world region.
PREREQUISITE: INS 201, GEG 242 OR POL 212 OR PERMISSION OF INSTRUCTOR.

INS367 Foreign Policy Topics
3 credits
Offered By Announcement Only
PREREQUISITE: INS 201 OR POL 212 OR PERMISSION OF INSTRUCTOR.

INS380 Democracy and Globalization in Latin America
3 credits
Offered By Announcement Only
The global dimensions of Latin American politics, emphasizing democratization and its discontents; human rights; the emergence of transnational civil society; and the impacts of market reforms on development, equity and social inclusion.
PREREQUISITE: INS 201 OR POL 212 OR PERMISSION OF INSTRUCTOR.

INS385 Latin American Topics
3 credits
Offered By Announcement Only
PREREQUISITE: INS 201 OR POL 212 OR PERMISSION OF INSTRUCTOR.

INS391 The European Union
3 credits
Fall & Spring Semester
The course will combine 6 objectives: 1) to investigate the historical development of Europe as a civilization and as an idea through review of some main historical and political factors and ideologies from 1815-present; 2) to survey the main organizations and experiments in European integration before/after World War II; 3) to analyze the historical development of the European communities; 4) to examine major institutions of the European Union; 5) to analyze the main European Union policies and current issues; 6) to reflect upon the future of the nation-state and the idea of a united Europe, the role of transformed ideologies, and the rebirth of nationalism while pondering about future scenarios for European integration.
PREREQUISITE: INS 101.
INS394 European Topics  
3 credits  Offered By Announcement Only  
PREREQUISITE: INS 201 OR POL 212 OR PERMISSION OF INSTRUCTOR.

INS410 INS Advanced Seminar  
3 credits  Offered By Announcement Only  
PREREQUISITE: INS 201 OR POL 212 OR PERMISSION OF INSTRUCTOR.

INS411 IR Advanced Seminar  
3 credits  Offered By Announcement Only  
PREREQUISITE: INS 201 OR POL 212 OR PERMISSION OF INSTRUCTOR.

INS415 Independent Study  
1-6 credits  Fall & Spring Semester & First & Second Summer Session  
Individualized research done under the guidance of selected faculty member. Depending upon the requirements established by the instructor, the student will be responsible for a research paper corresponding to the number of credits taken.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

INS418 Honors Thesis  
3 credits  Fall & Spring Semester  
Honors thesis research. This course is required for students seeking magna or summa cum laude and those seeking departmental honors. A thesis committee comprised of three members, two from International Studies and one from the university faculty must be established. The thesis advisor must also be from International Studies.  
PREREQUISITE: PERMISSION OF ADVISOR.

INS419 Honors Thesis II  
3 credits  Fall & Spring Semester  
Honors thesis writing.  
PREREQUISITE: INS 418.

INS420 Global Trade  
3 credits  Spring Semester  
Economic principles in global issues such as comparative advantage; specialization and trade; macroeconomics in the open economy; commercial policy; globalization; inequalities, within and among nations; and governance.  
PREREQUISITE: INS 102 OR PERMISSION OF INSTRUCTOR.

INS421 Poverty and the Environment  
3 credits  Spring Semester  
The processes by which a growing economy creates wealth in the form of goods and services while simultaneously increasing poverty and pollution.  
PREREQUISITE: INS 102 OR PERMISSION OF INSTRUCTOR.

INS430 Comparative Studies Seminar  
3 credits  Offered By Announcement Only  
PREREQUISITE: INS 201, OR POL 212, OR PERMISSION OF INSTRUCTOR.

INS460 United Nations Seminar  
3 credits  Fall & Spring Semester  
The organization and functions of the UN, including its structure, network of agencies, and issues in which it is involved. Emphasis is given to reforms, the Millennium Development Goals, and problematic relationships among the UN member states.  
PREREQUISITE: INS 201 OR POL 212 OR PERMISSION OF INSTRUCTOR.
INS503 Int Relations Topics
3 credits
Offered By Announcement Only
Selected topics in International Relations Theory. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.

INS504 Int Rel Topics II
3 credits
Offered By Announcement Only
Selected topics in International Relations Theory. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.

INS510 ISSUES IN INS
3 credits
Offered By Announcement Only
Analysis of current issues of international importance.

INS511 Issues in INS II
3 credits
Offered By Announcement Only
Analysis of current issues of international importance.

INS512 International Administration
3 credits
Fall Semester
Introductory course for the Master of Arts in International Administration.
PREREQUISITE: GRADUATE STUDENTS ONLY.

INS513 Information and Communication in International Relations
3 credits
Fall Semester
First semester offering for students in the Master of Arts in International Administration program.
PREREQUISITE: GRADUATE STUDENTS ONLY.

INS514 World Affairs
3 credits
Fall Semester
Explores the complexity of world affairs in relation to international administrative fields. First semester offering for students in the Master of Arts in International Administration program.
PREREQUISITE: GRADUATE STUDENTS ONLY.

INS515 Independent Study
1-6 credits
Fall & Spring Semester & First & Second Summer Session
Advanced level research done under the guidance of a selected faculty member. This course can be used as one of the two 500-level requirements for International Studies majors.

INS516 Str Thinking, Neg and Bargaining
3 credits
Spring Semester
Second semester offering for students in the Master of International Administration program.
PREREQUISITE: GRADUATE STUDENTS ONLY.
INS517 Practicum in International Administration
3 credits
Offered By Announcement Only
Each student in the Master of Arts in International Studies (with a specialization in International Administration) is required to complete a three (3) credit practicum/internship during the summer months subsequent to their completion of the fall and spring semester. The purpose of the practicum is to give each student the necessary skills to help advance their professional careers.
PREREQUISITE: PERMISSION OF PROGRAM COORDINATOR.

INS519 Internship
1-3 credits
Fall & Spring Semester & First & Second Summer Session
A research paper is required for this course. The student works with a selected faculty member who determines the length and scope of the project. The Student is responsible for finding the internship position.

INS520 Microeconomics for INS
3 credits
Offered By Announcement Only
Microeconomics for students of international studies. Topics will include rationality, market failure and comparative advantage.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS521 INT'L ECON TOPICS II (International Economic System Topics)
3 credits
Offered By Announcement Only
Selected topics in International Economics. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS522 Latin American Political Economy
3 credits
Offered By Announcement Only
Latin American political economy including analysis of market reform and integration of the region into the world economy.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS523 Economics of Terrorism
3 credits
Spring Semester
Economic resources of terrorist movements today: their financing, acquisition of tools, recruitment, and operations.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS524 INTL ECON Topics
3 credits
Offered By Announcement Only
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS530 Comparative Analysis
3 credits
Offered By Announcement Only
Advanced overview of the comparative method. Required for students specializing in Comparative Studies at the graduate level.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.
INS531 Dictatorship and Human Rights
3 credits Offered By Announcement Only
How have societies coped with traumatic pasts, and how have they faced the tension between remembering and forgetting? This course will explore these issues with a view to various approaches and scenarios.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS532 Globalization and Human Rights
3 credits Offered By Announcement Only
The integration of markets has many concerned for the political and economic rights of the common citizen. This course examines The effect of globalization on the human rights standards throughout the world.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS533 Transnational Social Movements
3 credits Offered By Announcement Only
Focuses on global civic activism and contentious politics, with particular attention to transnational non-state actors - NGOs, social movements, environmental protection, and the emergence of a global civil society.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS534 Military, State and Society
3 credits Offered By Announcement Only
The role of the military in state formation; questions of military rule, civilian control, and social structures in contemporary world politics.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS536 Comparative Political Regimes
3 credits Offered By Announcement Only
Literature concerned with the transition from authoritarianism to democracy in various parts of the world.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS537 Comparative Political Economy
3 credits Fall Semester
Compares how domestic politics and macroeconomic policies interact with globalization. Case studies include welfare states in the U.S. and Europe, East Asian development, post communist transitions and market restructuring in Latin America and Africa.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS540 National Security
3 credits Offered By Announcement Only
The central issues concerning European security since World War II, with emphasis on the period since the end of the cold war.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS541 The Role of Intelligence in U.S. National Security
3 credits Offered By Announcement Only
Required alternate for students concentrating in Strategic Studies. Explains what intelligence is, how it is collected and analyzed, and what it contributes to U.S. national security. Discusses the issue of secret intelligence activities in a democratic society.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.
INS542 Drug-Trafficking in the Americas  
3 credits  
Fall Semester  
The political economy of the U.S.-Latin American drug trade in the 20th Century along with the dynamics of the U.S.-led war on drugs through the first years of the Twenty First Century.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS543 National Security and Foreign Policy  
3 credits  
Second Summer Session  
Explores alternative conceptualizations of "security" and the new challenges to U.S. national security that have emerged in the Post-Cold War era.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS550 Non-Western Regional Topics  
3 credits  
Offered By Announcement Only  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS551 Regional Topics II  
3 credits  
Offered By Announcement Only  
Selected topics in International Business. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS560 US Foreign Policy  
3 credits  
Spring Semester  
The leading approaches to the analysis of American foreign policy. Particular emphasis will be placed on the post-Cold War period and the new challenges to U.S. foreign policy of the 21st century.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS561 Negotiation and Bargaining  
3 credits  
Spring Semester  
Examines the nature of diplomatic negotiation through readings and discussion of international negotiation and through the case method, selecting several cases of high-level policy issues in which the United States has been a principal actor.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS562 International Peace and Conflict Resolution  
3 credits  
Offered By Announcement Only  
The major sources of conflict, and what resources are available for making and keeping the peace? This class introduces students to the most fundamental concerns of the field of International Relations (IR), and especially of its subfield IPCR.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS563 International Organizations  
3 credits  
Offered By Announcement Only  
The role, function, and impact on states of international governmental and non-governmental organizations in critical areas like peace and security, human rights, economic development, and environmental degradation.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.
INS564 International Law  
3 credits  
**Fall Semester**
How international law affects the conduct of states. Issues include jurisdiction, diplomatic immunity, the use of armed force, peaceful dispute settlement among states, human rights, and the International Criminal Court.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS565 The World Before European Domination  
3 credits  
**Spring Semester**
The historical roots of the contemporary international system. Its objective is to question the standard Eurocentric perspective on the rise of the West to a dominant position in the global system.
PREREQUISITE: 15 CREDITS IN ADVANCED LEVEL SOCIAL SCIENCES OR PERMISSION OF INSTRUCTOR.

INS566 US-Latin American Relations  
3 credits  
**Fall Semester**
Political, economic and strategic aspects of U.S.-Latin American relations; the historical experience and contemporary issues, including the influence of extra-regional parties such as Europe and China.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS567 Foreign Policy Topics  
3 credits  
Offered By Announcement Only
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS570 Globalization and Health  
3 credits  
**Fall Semester**
Globalization and its benefits and threats to public health; the relationship between global economic, political, social, cultural, environmental and technological changes and their impact on human health.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS571 International Development and Human Welfare  
3 credits  
**Spring Semester**
Health and development links; macroeconomic policies and their impact on social equity; poverty and structural inequities; and other key issues that influence human development.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS572 Global Health Policy and Ethics  
3 credits  
Fall & Spring Semester
National, regional and global health policies with special consideration to ethical and human rights issues; policies and the moral considerations that shape public health policy.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS573 Disasters, Terrorism and Global Public Health  
3 credits  
**Spring Semester**
The historical processes and present trends of disasters, terrorism, humanitarian emergencies and their impact on human health, safety and security.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.
INS580 Latin American Comparative Politics  
3 credits                                             Fall Semester  
The major intellectual debates shaping the field of comparative politics including: (1) development, (2) military politics, (3) democratization and (4) the emergence of new social movements.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS581 Politics and Ideology in Latin America  
3 credits                                             Offered By Announcement Only  
The roles played by both "class" and the "new social movements" in the emergence of new modes of political representation.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS582 Problems of Latin American Democracies  
3 credits                                             Offered By Announcement Only  
The Left and the Right, business, and indigenous movements along with issues such as transitional justice, state reform, public security, human rights and the politics of memory.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS583 Chile: Politics and Society  
3 credits                                             Offered By Announcement Only  
Changes in Chilean politics and society. The three chronological parts of Chilean history: pre-1973, the years of dictatorship and the contemporary transition to democracy since 1990.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS584 Latin American Thought  
3 credits                                             Spring Semester  
The evolution of Latin American thought through political and intellectual history; the classical writings of the main "pensadores", and a comparative analysis of contemporary ideological trends.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS585 Dilemmas of Mexican Democracy  
3 credits                                             Offered By Announcement Only  
Contemporary politics in Mexico and US-Mexican relations first-hand during visits to Mexico City and Oaxaca. Meetings with Mexican scholars and civil society leaders are included.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS586 Brazil in Transition  
3 credits                                             Offered By Announcement Only  
The social, economic, cultural transformations shaping Brazilian politics. In addition to visiting Rio de Janeiro and Salvador, there will be seminars with Brazilian academics and social and political activists.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS587 Politics in Central America  
3 credits                                             Offered By Announcement Only  
The domestic issues of the Central American republics and their relationships with the United States, other western hemisphere countries and the global system.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.
INS588 Politics in the Andes
3 credits
Offered By Announcement Only
The domestic issues of the Andean republics and their relationships with the United States, other western hemisphere countries and the global system.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS589 Argentine Politics and Society
3 credits
Offered By Announcement Only
Seminar offered in Buenos Aires covering dilemmas of democratic consolidation, social justice, and market reform. Students will meet with Argentine social scientists and leaders of major social, economic, and political movements.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS591 The European Union
3 credits
Fall & Spring Semester
The European Union's history, institutions, policies and contemporary issues.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS592 European Union and the World
3 credits
Spring Semester
The European Union's development, its main institutions and policies followed by an analysis of the main features of the European Union's external relations.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS593 European Security
3 credits
Spring Semester
Regional security in Europe, focusing on NATO expansion, EU expansion, Russian foreign policy, and related issues.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS594 European Topics
3 credits
Offered By Announcement Only
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS595 European Social Movements
3 credits
Offered By Announcement Only
The major social movements active today throughout Europe including those concerned with the environment, agriculture, poverty, racism, defending social democracy, the rights of workers, minorities, and women.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS599 Special Topics
3 credits
Offered By Announcement Only

ITALIAN

ITA101 Elementary Italian I
3 credits
Fall & Spring Semester
Drill in pronunciation, grammatical principles, reading and translation, oral and written exercises. Normally closed to students who have completed two years of high school Italian. Closed to native speakers.
PREREQUISITE: CLOSED TO NATIVE SPEAKERS.

ITA102 Elementary Italian II
3 credits
Fall & Spring Semester
Continuation of ITA 101. Closed to native speakers.
PREREQUISITE: ITA 101. CLOSED TO NATIVE SPEAKERS.
ITALIAN

ITA211 Intermediate Italian I
3 credits  Fall & Spring Semester
Integrated grammar review. Diverse selection of readings: stories, plays, essays, interviews. Practice in speaking and in writing. Class conducted in Italian.
PREREQUISITE: CLOSED TO NATIVE SPEAKERS. ITA 102, A STRONG HIGH SCHOOL BACKGROUND (4 YEARS; GOOD PROGRAM; GOOD GRADES).

ITA212 Intermediate Italian II
3 credits  Fall & Spring Semester
This course uses different genres of texts (portraits, descriptions, short stories, film reviews, magazines) to explore different ways of writing and to prepare students for 300-level work. Structured in a workshop format, the course also develops conversational skills. Class conducted in Italian. Closed to native speakers.
PREREQUISITE: ITA 211; CLOSED TO NATIVE SPEAKERS.

ITA301 Introduction to Literary Genres
3 credits  Offered By Announcement Only
Genres and periods of Italian literature. Writing skills for non-native speakers.
Closed to native speakers formally educated in Italian. Writing credit.
PREREQUISITE: ITA 212 OR EQUIVALENT.

ITA310 Topics in Italian Studies in Translation
3 credits  Offered By Announcement Only
Intensive study, in English translation, of a topic, theme, author, period, or literary movement. May be repeated when the topic varies. Writing Credit.
PREREQUISITE: ENG 105 AND 106, OR EQUIVALENT.

ITA321 Special Topics in Italian Literature
3 credits  Offered By Announcement Only
Intensive study of an author, a period, or a literary movement. May be repeated for credit when the topic varies. Writing credit.
PREREQUISITE: ITA 212 OR EQUIVALENT.

ITA363 Introduction to Medieval and Renaissance Italian Literature
3 credits  Offered By Announcement Only
Culture and literature in Italian vernacular from its earliest document through the Renaissance. May be used to fulfill humanities literature requirement. Writing credit.
PREREQUISITE: ITA 212 OR EQUIVALENT.

ITA364 Introduction to 17th-19th Century Italian Literature
3 credits  Offered By Announcement Only
Italian culture and literature from the Baroque to the nineteenth century. May be used to fulfill humanities literature requirement. Writing credit.
PREREQUISITE: ITA 212 OR EQUIVALENT.

ITA365 Introduction to 20th Century Italian Literature
3 credits  Offered By Announcement Only
Italian culture and literature of the twentieth century. May be used to fulfill humanities literature requirement. Writing credit.
PREREQUISITE: ITA 212 OR EQUIVALENT.

ITA394 Internship
1-3 credits  Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: 6 CREDITS IN ITA ABOVE ITA 211
ITALIAN

ITA591 Directed Readings
1- 3 credits                                           Offered By Announcement Only
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

ITA592 Directed Readings
1- 3 credits                                           Offered By Announcement Only
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

ITA593 Directed Readings
1- 3 credits                                           Offered By Announcement Only
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

JAPANESE

JPN101 Elementary Japanese I
3 credits                                                             Fall Semester
Introduction to modern Japanese: pronunciation, grammar, conversation, and the
elements of the writing system. Closed to native speakers.

JPN102 Elementary Japanese II
3 credits                                                           Spring Semester
Continuation of JPN 101. Introduction to modern Japanese: pronunciation, grammar,
conversation, and the elements of the writing system. Closed to native speakers.
PREREQUISITE: JPN 101, AND CLOSED TO NATIVE SPEAKERS.

JPN201 Intermediate Japanese I
3 credits                                                             Fall Semester
Continuation of JPN 102. Grammar, composition and readings in modern Japanese,
which will introduce students to aspects of Japanese customs, history and culture.
Closed to native speakers.
PREREQUISITE: JPN 102, AND CLOSED TO NATIVE SPEAKERS.

JPN202 Intermediate Japanese II
3 credits                                                           Spring Semester
Continuation of JPN 201. Grammar, dialogues, and readings, designed to integrate
listening, comprehension, speaking, reading and writing skills. Discussion of the
Japanese culture, history, and customs. Closed to native speakers.
PREREQUISITE: JPN 201. CLOSED TO NATIVE SPEAKERS.

JUDAIC STUDIES - HUMANITIES

JUH231 Jewish Civilization: Society, Culture, and Religion
3 credits                                              Offered By Announcement Only
Introduction to Jewish civilization from Abraham to present.

JUDAIC STUDIES

JUS205 Icheic Service Corps Internship
3 credits                                                             Fall Semester
Interns will gain meaningful experiences that will offer them an opportunity to
become involved in service-oriented activities that give them a deep insight and
unique understanding of the historical significance of the Holocaust while providing
valuable services to the survivors of Nazi atrocities
PREREQUISITE: SOPHOMORE STANDING OR PERMISSION OF THE ICHEIC COORDINATOR. STUDENTS
SHOULD HAVE TAKEN AT LEAST ONE COURSE ON THE HOLOCAUST, E.G. HIS348, 396,
341, 338 OR JUS 401.
JUS206 ICHEIC Service Corps Internship  
3 credits  
Spring Semester  
Interns will gain meaningful experiences that will offer them an opportunity to become involved in service-oriented activities that give them a deep insight and unique understanding of the historical significance of the Holocaust while providing valuable services to the survivors of Nazi atrocities.  
PREREQUISITE: SOPHOMORE STANDING OR PERMISSION OF THE ICHEIC COORDINATOR. STUDENTS SHOULD HAVE TAKEN AT LEAST ONE COURSE ON THE HOLOCAUST, E.G. HIS348, 396, 341, 338 OR JUS 401.

JUS231 Jewish Civilization: Society, Culture, and Religion  
3 credits  
Offered By Announcement Only  
Introduction to Jewish civilization from Abraham to present.

JUS250 The Holocaust Through Film, Memoir and Testimony  
3 credits  
Offered By Announcement Only  
The purpose of the course is to introduce students to the history of the Holocaust through classroom dialogue, film, and literature analysis. Involve students in major ethical and moral issues raised in the study of the Holocaust by encouraging students to think critically, explore choices, and make decisions based on a code of conduct that reflects a commitment to humanity.  
PREREQUISITE: NONE

JUS301 STUDIES IN JUDAICA  
3 credits  
Offered By Announcement Only  
Special topics offering at the 300-level for students pursuing a major/minor in Judaic Studies.  
PREREQUISITE: NONE

JUS310 Development of Jewish Intellectual Roots  
3 credits  
Offered By Announcement Only  
Contributions by Jewish intellectuals from diversified fields in the establishment of Jewish roots.  
PREREQUISITE: JUS 231.

JUS314 The Rise of Judaism  
3 credits  
Fall & Spring Semester  
The history and literature of early Judaism, covering the period from the fall of Jerusalem in 587/586 BCE to the beginnings of rabbinic Judaism and the formation of the Mishnah (ca. 200 CE).  
PREREQUISITE: 3 CREDITS IN JUDAIC STUDIES

JUS338 History of the Holocaust  
3 credits  
Fall Semester

JUS352 Panoramic View of the Middle East  
3 credits  
Fall & Spring Semester  
The course is designed to provide a comprehensive introduction to the Middle East and a basic understanding of factors, forces and processes shaping developments in the modern and contemporary history of this important world region.  
PREREQUISITE: INS 201, GEG 242 OR POL 212 OR PERMISSION OF INSTRUCTOR
JUS360 Hollywood and Popular Culture: The American Jewish Experience  
3 credits Offered By Announcement Only  
The image of the Jew and the Jewish experience in American Cinema.  
PREREQUISITE: JUH 231 OR HIS 102 AND PERMISSION OF INSTRUCTOR.

JUS375 Religion and Democracy in Israel  
3 credits Offered By Announcement Only  
Israel's evolution as a nation and a society by focusing on how religion impacts ethnicity, culture, and democracy.  
PREREQUISITE: THREE CREDITS IN REL AND/OR PERMISSION OF INSTRUCTOR.

JUS380 Archeology of Palestine  
3 credits Fall & Spring Semester  
Survey of the major archaeological excavations and surveys of Palestine, how this is used to interpret biblical narrative. The emergence of Judaism and Christianity.  
PREREQUISITE: 3 CREDITS IN REL, HIS 221, OR PERMISSION OF INSTRUCTOR

JUS401 Studies in Judaica  
1- 3 credits Offered By Announcement Only  
Designed to enable students interested in some phase of Judaic Studies to study extensively in that field of interest.  
PREREQUISITE: JUS 231 OR PERMISSION OF INSTRUCTOR.

JUS410 Special Topics  
1- 3 credits Offered By Announcement Only  
PREREQUISITE: JUS 231 OR PERMISSION OF INSTRUCTOR.

JUS411 Special Topics  
1- 3 credits Offered By Announcement Only  
PREREQUISITE: JUS 231 OR PERMISSION OF INSTRUCTOR.

JUS421 Internship in Judaic Studies  
1- 3 credits Fall & Spring Semester  
Prescribed study and supervised work with practitioners in Judaic services.  
PREREQUISITE: JUS 231 AND THREE OTHER CREDITS IN JUDAIC STUDIES.

JUS498 Senior Thesis  
3 credits Fall & Spring Semester  
Partial requirement for Departmental Honors in Judaic Studies. Thesis to be a documented essay in any area of Judaic Studies written under the direction of a member of the faculty.  
PREREQUISITE: SENIOR STATUS, CERTIFICATION BY DIRECTOR OF JUDAIC STUDIES, AND PERMISSION OF THE THESIS DIRECTOR.

JUS499 Senior Thesis  
3 credits Fall & Spring Semester  
Partial requirement for Departmental Honors in Judaic Studies. Thesis to be a documented essay in any area of Judaic Studies written under the direction of a member of the faculty.  
PREREQUISITE: SENIOR STATUS, CERTIFICATION BY DIRECTOR OF JUDAIC STUDIES, AND PERMISSION OF THE THESIS DIRECTOR.

LATIN  
LAT101 Elementary Latin I  
3 credits Fall & Spring Semester  
Elementary vocabulary, grammar and reading.
LAT102 Elementary Latin II 3 credits Fall & Spring Semester
Continuation of LAT 101.

LAT201 INTERMEDIATE LATIN I 3 credits Fall & Spring Semester
Translation and grammatical analysis of selected texts from Latin authors.
PREREQUISITE: LAT 102 OR PERMISSION OF THE INSTRUCTOR

LAT202 INTERMEDIATE LATIN II 3 credits Fall & Spring Semester
Introduction to reading Latin poetry. Students will read selections from the Aeneid, with emphasis on Virgil's language and meter, as well as the ancient epic tradition.
Latin 202 prepares students for 300- and 400-level Latin poetry courses.
PREREQUISITE: LAT 201 OR PERMISSION OF THE INSTRUCTOR

LAT203 Ovid's Metamorphoses 3 credits Fall & Spring Semester
PREREQUISITE: LAT 201 OR EQUIVALENT

LAT301 CATULLUS 3 credits Fall & Spring Semester
An advanced Latin course on the works of the Roman poet Catullus. Students will read almost all of the poems in the Catullan corpus, and be introduced to the related secondary literature, covering topics such as ancient sexuality, invective and obscenity, the figure of the mistress in Latin love poetry, the arrangement of poems within a poetic book, meter, and the textual tradition.
PREREQUISITE: LAT 201 OR PERMISSION OF THE INSTRUCTOR

LAT302 Petronius 3 credits Fall & Spring Semester
An advance Latin prose reading course on Petronius "Satyricon," a mysterious and fragmentary novel dating from the time of the decadent emperor Nero. Trimalchio's Dinner-Party, the central section of the work, forms the focus of the course.
It is an account of a dinner hosted by a wealthy ex-slave, and can be read as a critique of the excesses of the Neronian age.

LAT311 CICERO: ORATIONS 3 credits Fall & Spring Semester
Readings from the speeches of Cicero, with an emphasis on syntax, vocabulary, rhetorical theory and practice, and the historical situation of the speeches.
PREREQUISITE: LAT 201 OR PERMISSION OF THE INSTRUCTOR.

LAT321 VERGIL 3 credits Fall & Spring Semester
An advanced reading course in the poems of Vergil.
PREREQUISITE: LAT 201 OR PERMISSION OF THE INSTRUCTOR

LAT322 Martial Epigrams 3 credits Fall & Spring Semester
PREREQUISITE: LAT 201 OR PERMISSION OF THE INSTRUCTOR

LAT323 Seneca 3 credits Fall & Spring Semester
LAT401 Special Topics in Latin Literature  
3 credits  
FALL & SPRING SEMESTER & FIRST & SECOND SUMMER SESSION  
This course will address a specific author, topic, or text (appearing as a subtitle)  
Analogous to REL 404-409 courses. This will vary each time the course is offered.  
PREREQUISITE: LAT 201 OR PERMISSION OF THE INSTRUCTOR  

LAT402 Special Topics in Latin Literature  
3 credits  
FALL & SPRING SEMESTER & FIRST & SECOND SUMMER SESSION  
This course will address a specific author, topic, or text (appearing as a subtitle).  
Analogous to REL 404-409 courses. [this will vary each time the course is offered]  
PREREQUISITE: LAT 201 OR PERMISSION OF THE INSTRUCTOR  

LAT403 Special Topics in Latin Literature  
3 credits  
FALL & SPRING SEMESTER & FIRST & SECOND SUMMER SESSION  
This course will address a specific author, topic, or text (appearing as a subtitle).  
Analogous to REL 404-409 courses. [this will vary each time the course is offered]  
PREREQUISITE: LAT 201 OR PERMISSION OF THE INSTRUCTOR  

LAT404 Special Projects in the Literature & Culture of Ancient Rome  
3 credits  
FALL & SPRING SEMESTER & FIRST & SECOND SUMMER SESSION  
This course will address a specific project in Classics (appearing as a subtitle)  
Analogous to REL 407-409. [this will vary each time the course is offered]  
PREREQUISITE: LAT 201 OR PERMISSION OF THE INSTRUCTOR  

LAT405 Special Projects in the Literature and Culture of Ancient Rome  
3 credits  
FALL & SPRING SEMESTER & FIRST & SECOND SUMMER SESSION  
This course will address a specific project in Classics (appearing as a subtitle)  
Analogous to REL 407-409.  
PREREQUISITE: LAT 201 OR PERMISSION OF THE INSTRUCTOR  

LAT406 Special Projects in the Literature and Culture of Ancient Rome  
3 credits  
FALL & SPRING SEMESTER & FIRST & SECOND SUMMER SESSION  
This course will address a specific project in Classics (appearing as a subtitle).  
Analogous to REL 407-409.  
PREREQUISITE: LAT 201 OR PERMISSION OF INSTRUCTOR  

LAT407 Supervised Reading in Classical Latin  
3 credits  
FALL & SPRING SEMESTER & FIRST & SECOND SUMMER SESSION  
Variable subject matter determined by instructor and student. Analogous to REL 401-403.  
PREREQUISITE: LAT 201 OR PERMISSION OF INSTRUCTOR  

LAT408 Supervised Reading in Classical Latin  
3 credits  
FALL & SPRING SEMESTER & FIRST & SECOND SUMMER SESSION  
Variable subject matter determined by instructor and student. Analogous to REL 401-403.  
PREREQUISITE: LAT 201 OR PERMISSION OF INSTRUCTOR  

LAT409 Supervised Reading in Classical Latin  
3 credits  
FALL & SPRING SEMESTER & FIRST & SECOND SUMMER SESSION  
Variable subject matter determined by instructor and student. Analogous to REL 401-403.  
PREREQUISITE: LAT 201 OR PERMISSION OF INSTRUCTOR
LAT411 HORACE
3 credits  Fall & Spring Semester
Readings in the odes, epodes, satires and epistles of Horace.
PREREQUISITE: LAT 201 OR PERMISSION OF THE INSTRUCTOR.

LAT421 Roman Epic
3 credits  Fall & Spring Semester
Studies from Roman epic poetry of Lucretius and Virgil to Lucan and Statius.

LAT422 Lucretius
3 credits  Fall & Spring Semester
Detailed treatment of the Latin philosophical poet Lucretius and his lone surviving poem, DE RERVM NATVRA.
PREREQUISITE: LAT 202 OR PERMISSION OF THE INSTRUCTOR

LAT431 Roman Historians
3 credits  Fall & Spring Semester
Readings from Sallust, Livy, and Tacitus.

LAT491 Directed Readings
1-3 credits  Fall & Spring Semester & First & Second Summer Session
Content to be determined by faculty member and registering student(s)
PREREQUISITE: SIX CREDITS IN CLASSICS OR PERMISSION OF INSTRUCTOR

LATIN AMERICAN STUDIES

LAS101 Introduction to Latin American and Caribbean Studies
3 credits  Fall & Spring Semester

LAS110 Students in Latin America and the Caribbean
1-3 credits  Not Offered; Transfer Credit Only

LAS111 Studies in Latin America and the Caribbean
1-3 credits  Not Offered; Transfer Credit Only

LAS112 Studies in Latin America and the Caribbean
1-3 credits  Not Offered; Transfer Credit Only

LAS113 Studies in Latin America and the Caribbean
1-3 credits  Not Offered; Transfer Credit Only

LAS114 Studies in Latin America and the Caribbean
1-3 credits  Not Offered; Transfer Credit Only

LAS115 Studies in Latin America and the Caribbean
1-3 credits  Not Offered; Transfer Credit Only

LAS196 Film Series and Colloquia for First Year Seminar in Latin American and Caribbean
1 credit  Fall Semester
Screening and discussion of films related to FSS 195. Must be taken with FSS 195.
PREREQUISITE: MUST BE TAKEN WITH FSS 195

LAS201 Introduction to Latin American and Caribbean Studies
3 credits  Fall Semester
Course will focus interdisciplinary on culture, economy, geography, history, politics, and society of Latin America and the Caribbean, as well as on the ways in which scholars have studied the region.
PREREQUISITE: FSS 195 OR ANY COURSE WITH A LATIN AMERICAN AND/OR CARIBBEAN FOCUS
LAS210 Studies in Latin America and the Caribbean  
1-3 credits  
Not Offered; Transfer Credit Only

LAS211 Studies in Latin America and the Caribbean  
1-3 credits  
Not Offered; Transfer Credit Only

LAS212 Studies in Latin America and the Caribbean  
1-3 credits  
Not Offered; Transfer Credit Only

LAS213 Studies in Latin America and the Caribbean  
1-3 credits  
Not Offered; Transfer Credit Only

LAS214 Studies in Latin America and the Caribbean  
1-3 credits  
Not Offered; Transfer Credit Only

LAS215 Studies in Latin America and the Caribbean  
1-3 credits  
Not Offered; Transfer Credit Only

LAS251 History Discussion Section for Learning Community  
0 credit  
Fall Semester  
PREREQUISITE: COREQUISITE HIS 251

LAS301 Interdisciplinary Topics in Latin American and Caribbean Studies  
3 credits  
Fall & Spring Semester  
Topics Vary, Interdisciplinary focus may be thematic (e.g.: revolutions, new social movements, women's rights, Latin Americanism, testimonies, culture industries, etc.) or regional/national (e.g.: Andean Studies, Southern Cone Studies, Caribbean Studies, Mexican Studies, etc.)  
PREREQUISITE: LAS 101 OR PERMISSION OF INSTRUCTOR

LAS302 Interdisciplinary Topics in Latin American and Caribbean Studies-Travel Course  
3 credits  
Spring Semester  
Topics vary, Interdisciplinary focus is thematic and regional (i.e. tourism in Yucatan; civil society in Chile, civil society in Haiti, cultural policy in the Caribbean, environmental policy in Panama). Course involves travel during Spring Break and it has a program fee.  
PREREQUISITE: LAS 101 AND PERMISSION OF INSTRUCTOR

LAS310 Studies in Latin America and the Caribbean  
1-3 credits  
Not Offered; Transfer Credit Only

LAS311 Studies in Latin America and the Caribbean  
1-3 credits  
Not Offered; Transfer Credit Only

LAS312 Studies in Latin America and the Caribbean  
1-3 credits  
Not Offered; Transfer Credit Only

LAS313 Studies in Latin America and the Caribbean  
1-3 credits  
Not Offered; Transfer Credit Only

LAS314 Studies in Latin America and the Caribbean  
1-3 credits  
Not Offered; Transfer Credit Only

LAS315 Studies in Latin America and the Caribbean  
1-3 credits  
Not Offered; Transfer Credit Only
LAS320 Special Topics in Latin American and Caribbean Environment
3 credits                                              Offered By Announcement Only
Topics vary. Interdisciplinary focus on policies and impact on globalization on
the environment.
PREREQUISITE: PREREQUISITES VARY - SEE COURSE OFFERINGS FOR DETAILS

LAS321 Latin American Environmental Issues
3 credits                                              Fall Semester
PREREQUISITE: LAS 101 OR PERMISSION OF INSTRUCTOR

LAS330 Special Topics in Latin American and Caribbean Religions
3 credits                                              Offered By Announcement Only
Topics vary. Interdisciplinary focus may be thematic or regional (eg: Liberation
Theology, Latin American and Latino Religions, Caribbean Religions.)
PREREQUISITE: PREREQUISITES VARY - SEE COURSE OFFERINGS FOR DETAILS

LAS340 Special Topics in Latin American and Caribbean Economics
3 credits                                              Offered By Announcement Only
PREREQUISITE: PREREQUISITES VARY - SEE COURSE OFFERINGS FOR DETAILS

LAS350 Special Topics in Latin American and Caribbean Art and Culture
3 credits                                              Offered By Announcement Only
PREREQUISITE: PREREQUISITES VARY - SEE COURSE OFFERINGS FOR DETAILS

LAS360 Special Topics in Latin American and Caribbean Politics
3 credits                                              Offered By Announcement Only
Topics Vary. Interdisciplinary focus may be thematic or regional (eg: democracy,
new social movements, globalization, politics and society.)
PREREQUISITE: PREREQUISITES VARY - SEE COURSE OFFERING FOR DETAILS

LAS370 Special Topics in Latin American and Caribbean Media and Communications
3 credits                                              Offered By Announcement Only
PREREQUISITE: PREREQUISITES VARY - SEE COURS OFFERING FOR DETAILS

LAS410 Studies in Latin America and the Caribbean
1- 3 credits                                              Not Offered; Transfer Credit Only

LAS411 Studies in Latin America and the Caribbean
1- 3 credits                                              Not Offered; Transfer Credit Only

LAS412 Studies in Latin America and the Caribbean
1- 3 credits                                              Not Offered; Transfer Credit Only

LAS413 Studies in Latin America and the Caribbean
1- 3 credits                                              Not Offered; Transfer Credit Only

LAS414 Studies in Latin America and the Caribbean
1- 3 credits                                              Not Offered; Transfer Credit Only

LAS415 Studies in Latin America and the Caribbean
1- 3 credits                                              Not Offered; Transfer Credit Only
LAS494 Independent Study in Latin American and Caribbean Studies
1-3 credits Fall & Spring Semester
Independent study leading to a thesis, original piece of research, or creative project on a Latin American or Caribbean subject.
PREREQUISITE: SIX CREDITS IN LAS OR LAS-APPROVED COURSES AT OR ABOVE THE 300-LEVEL, AND PERMISSION OF INSTRUCTOR.

LAS501 Interdisciplinary in Latin American and Caribbean Studies.
3 credits Fall Semester
Interdisciplinary methods and politics of Latin American and Caribbean area Studies.
PREREQUISITE: SIX CREDITS IN LAS OR LAS-APPROVED COURSES AT OR ABOVE THE 300-LEVEL.

LAS502 Research Design in Latin American Studies
3 credits Spring Semester
Interdisciplinary research methods and skills in Latin American and Caribbean studies.
PREREQUISITE: LAS 501 OR PERMISSION OF INSTRUCTOR

LAS503 Program Seminar in Latin American Studies and Caribbean Studies
3 credits Fall & Spring Semester
Content of course will vary by semester.
PREREQUISITE: LAS 501 OR SIX CREDITS IN LAS OR LAS-APPROVED COURSES AT OR ABOVE THE 300-LEVEL.

LAS504 Interdisciplinary Topics in Latin American and Caribbean Studies - Travel Course
3 credits Spring Semester
Topics vary. Interdisciplinary focus is thematic and regional (e.g.: tourism in Yucatan; civil society in Chile, Haiti-Dominican Republic relations, cultural policy in the Caribbean, environmental policy in Panama.) Course involves travel during Spring Break and it has a program fee.
PREREQUISITE: LAS 101 AND SENIOR STATUS AND PERMISSION OF INSTRUCTOR

LAS505 Internship in Latin American and Caribbean Studies
1-3 credits Fall & Spring Semester & First & Second Summer Session
On-site experience in business, governmental organization, or non-profit organization dealing with Latin America and/or the Caribbean.
PREREQUISITE: DECLARED MAJOR OR MINOR IN LATIN AMERICAN STUDIES, SIX CREDITS IN LAS OR LAS-APPROVED COURSES AT OR ABOVE THE 300-LEVEL, AND PERMISSION OF LAS DIRECTOR.

LAS520 Interdisciplinary Topics in Latin American and Caribbean Environments
3 credits Fall & Spring Semester
Topics vary. Interdisciplinary focus on policies and impact of globalization on the environment.
PREREQUISITE: LAS 101 AND SENIOR STATUS

LAS521 Latin American Environmental Issues
3 credits Fall Semester
PREREQUISITE: LAS 101 AND SENIOR STATUS, OR LAS 501, OR PERMISSION OF INSTRUCTOR
LAS594 Directed Readings in Latin America and Caribbean
3 credits Fall & Spring Semester
Independent Study leading to an original piece of research, or creative project on a Latin American or Caribbean interdisciplinary topic.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF LAS DIRECTOR

LAS597 Readings for the Comprehensive Exam
3 credits Fall & Spring Semester
Readings for M.A. students who are preparing for comprehensive examinations.
PREREQUISITE: PERMISSION OF ADVISOR AND PROGRAM DIRECTOR

MATHEMATICS

MTH099 Intermediate Algebra
3 credits Fall & Spring Semester & First & Second Summer Session
Real number operations, polynomials, factoring, rational numbers and rational expressions. Cannot be used to fulfill the 120 credits required for graduation.
PREREQUISITE: EXTREME DEFICIENCY IN ALGEBRA. CANNOT BE USED TO FULFILL THE 120 CREDITS REQUIRED FOR GRADUATION.

MTH101 Algebra for College Students
3 credits Fall & Spring Semester & First & Second Summer Session
Algebraic operations and properties of the real numbers; linear and quadratic equations and inequalities; polynomials and factoring; rational expressions; radical expressions; graphs of lines; systems of linear equations.
PREREQUISITE: ADEQUATE ACHIEVEMENT ON MATHEMATICS PLACEMENT TEST. NOT OPEN TO STUDENTS WITH CREDIT IN MTH 105 OR 107. NOT FOR MAJOR OR MINOR.

MTH104 Geometry for Educators
3 credits Offered By Announcement Only
Origins of geometry; topics from Euclidean, coordinate, and transformational geometry. Includes laboratory component. Only for pre-certification students in the School of Education who are not mathematics or science majors.
PREREQUISITE: MTH 101 OR ADEQUATE ACHIEVEMENT ON MATHEMATICS PLACEMENT TEST.

MTH105 Algebra and Trigonometry
5 credits Fall & Spring Semester
An intensive course in algebra and trigonometry as covered in MTH 107-108, but without analytic geometry.
PREREQUISITE: MTH 101 OR ADEQUATE ACHIEVEMENT ON MATHEMATICS PLACEMENT TEST. NOT OPEN TO STUDENTS WITH CREDIT IN MTH 107 OR 108. NOT FOR MAJOR OR MINOR.

MTH107 Precalculus Mathematics I
3 credits Fall & Spring Semester & First & Second Summer Session
Algebraic operations; equations and inequalities; complex numbers; functions and their graphs; polynomial, exponential, and logarithmic functions; systems of equations.
PREREQUISITE: ADEQUATE ACHIEVEMENT ON MATHEMATICS PLACEMENT TEST. NOT OPEN TO STUDENTS WITH CREDIT IN MTH 105. NOT FOR MAJOR OR MINOR.
MTH108 Precalculus Mathematics II

1. **Credits:** 3
2. **Terms:** Fall & Spring Semester & First & Second Summer Session
3. **Description:** Rational functions; analytic geometry; trigonometric functions, identities, and equations.
4. **Prerequisites:** At least C- in MTH 107 or adequate achievement on Mathematics Placement Test. Not open to students with credit in MTH 105. Not for major or minor.

MTH113 Finite Mathematics

1. **Credits:** 3
2. **Terms:** Fall & Spring Semester & First & Second Summer Session
3. **Description:** Formerly MTH 103. Sets, logic, counting techniques, elementary probability and statistics, the mathematics finance, linear programming, algebraic structures, symmetry. The selection of topics may vary by instructor. Intended for BA students.
4. **Prerequisites:** MTH 101 or adequate achievement on Mathematics Placement Test.

MTH130 Introductory Calculus

1. **Credits:** 3
2. **Terms:** Fall & Spring Semester
3. **Description:** Formerly MTH 109. A one-semester survey of the fundamental principles of calculus, functions, limits, derivatives, definite integrals, applications.
4. **Prerequisites:** MTH 107 or adequate achievement on Mathematics Placement Test. Not for major or minor. Not for B.S. students.

MTH140 Calculus Concepts with Foundations A

1. **Credits:** 0 - 4
2. **Terms:** Fall Semester
3. **Description:** Formerly MTH 106. Tools from algebra and trigonometry for calculus. Functions and graphs, limits and continuity, the derivative and applications.
4. **Prerequisites:** Adequate achievement on Mathematics Placement Test. Not open to students with credit in MTH 161 or 162 or 171 or 172.

MTH141 Calculus Concepts with Foundations B

1. **Credits:** 4
2. **Terms:** Spring Semester
3. **Description:** Tools from algebra, trigonometry, and analytic geometry for calculus. Further aspects of differentiation. Antiderivatives, definite integrals, and their applications.
4. **Prerequisites:** C-Minus or better in MTH 140

MTH151 Calculus I for Engineers

1. **Credits:** 0 - 5
2. **Terms:** Fall & Spring Semester
3. **Description:** Formerly MTH 110. Analytic geometry, limits and continuity, derivatives, the definite integral, and applications relevant to engineering. Intended for students taking PHY 205 currently.
4. **Prerequisites:** At least a C- in MTH 105 or adequate achievement on Mathematics Placement Test together with completion of high school trigonometry and analytic geometry. Not open to students with credit in MTH 141 or 161 or 171.

MTH161 Calculus I

1. **Credits:** 0 - 4
2. **Terms:** Fall & Spring Semester & First & Second Summer Session
3. **Description:** Formerly MTH 111. Limits and continuity, derivatives and applications, the definite integral and applications.
4. **Prerequisites:** At least a C- in MTH 108 or adequate achievement on Mathematics Placement Test together with completion of high school trigonometry and analytic geometry. Not open to students with credit in MTH 141, 151, or 171.
MTH162 Calculus II
0-4 credits
Fall & Spring Semester & First & Second Summer Session
FORMERLY MTH 112 Transcendental functions, methods of integration. L'Hospital's Rule and improper integrals, infinite series, polar coordinates, and introduction to differential equations.
PREREQUISITE: MTH 141 OR MTH 151 OR MTH 161. NOT OPEN FOR STUDENTS WITH CREDIT IN MTH 172

MTH171 Calculus I
0-4 credits
Fall Semester
FORMERLY MTH 131 The theory of limits, the derivative and the definite integral, techniques and applications. The sequence MTH 171-172 is more conceptually-oriented than MT 161-162.
PREREQUISITE: FOR STUDENTS IN THE PRISM PROGRAM. NOT OPEN TO STUDENTS WITH CREDIT IN MTH 141 OR 151 OR 161

MTH172 Calculus II
0-4 credits
Fall & Spring Semester
FORMERLY MTH 132 Continuation of MTH 171. Additional topics on the derivative and definite integral, improper integrals, infinite series, and introduction to differential equations.
PREREQUISITE: FOR STUDENTS IN THE PRISM PROGRAM. NOT OPEN TO STUDENTS WITH CREDIT IN MTH 141 OR 151 OR 161

MTH210 Introduction to Linear Algebra
3 credits
Fall & Spring Semester
PREREQUISITE: PREREQUISITE OR COREQUISITE: MTH 112 OR 132

MTH211 Calculus III
3 credits
Fall & Spring Semester & First Summer Session
Matrix algebra, vectors in space, partial differentiation, multiple integration.
PREREQUISITE: MTH 162 OR 172. NOT OPEN TO STUDENTS WITH CREDIT IN MTH 310 OR 433 OR 533

MTH224 Introduction to Probability and Statistics
3 credits
Fall & Spring Semester & First Summer Session
Probability distributions, random variables, expectation and variance, point estimation, interval estimation, testing of hypothesis, analysis of variance.
PREREQUISITE: (OR COREQUISITE) MTH 162 OR 172

MTH230 Introduction to Abstract Mathematics
3 credits
Fall & Spring Semester
Fundamentals of set theory, logic and methods of mathematical proof.
PREREQUISITE: PREREQUISITE OR COREQUISITE: MTH 112 OR 132

MTH309 Discrete Mathematics I
3 credits
Fall & Spring Semester
PREREQUISITE: MTH 141 OR 151 OR 161 OR 171
MTH310 Multivariable Calculus
3 credits  Fall & Spring Semester & First Summer Session
Equations of curves, surfaces, solids; vector differential calculus; integration of scalar valued functions. Applications.
PREREQUISITE: MTH 210 AND (MTH 162 OR 172). NOT OPEN TO STUDENTS WITH CREDIT IN MTH 433 OR 533

MTH311 Introduction to Ordinary Differential Equations
3 credits  Fall & Spring Semester
PREREQUISITE: MTH 162 OR 172.

MTH320 Introduction to Numerical Analysis
3 credits  Spring Semester
Interpolation, quadrature, numerical solution of algebraic and transcendental equations, and optimization.
PREREQUISITE: MTH 210 AND (211 OR 310).

MTH359 Mathematical Models in Biology and Medicine
3 credits  Spring Semester
Fundamentals of the dynamical systems approach to modeling temporal change in biological systems. An introduction to the analysis of mathematical models in biology and medicine with detailed, concrete examples drawn from ecology, cell biology, neuro-science, and physiology.
PREREQUISITE: MTH 162 OR MTH 172 WITH GRADE OF C- OR BETTER

MTH433 Advanced Calculus
3 credits  Fall Semester
A rigorous and comprehensive treatment of the theoretical concepts of calculus. The real number system; sequences; series; continuity, differentiation, and integration of functions of one variable.
PREREQUISITE: MTH 230 AND 310

MTH461 Survey of Modern Algebra
3 credits  Fall & Spring Semester
ALGEBRAIC SYSTEMS, EQUIVALENCE CLASSES, GROUPS, RINGS, FIELDS, UNIQUE FACTORIZATION DOMAINS.
PREREQUISITE: MTH 210 AND MTH 230

MTH471 Directed Readings
1- 3 credits  Offered By Announcement Only
Topics selected from algebra, geometry, analysis, topology.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

MTH472 Directed Readings
1- 3 credits  Offered By Announcement Only
Topics selected from algebra, geometry, analysis, topology.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

MTH501 Place, Region, Nature
3 credits  Fall Semester
PREREQUISITE: 6 CREDITS IN GEG OR PERMISSION OF INSTRUCTOR
MTH502 History of Mathematics
3 credits
Fall Semester
The development of mathematics from its earliest beginnings through the first half of the twentieth century. Numeral systems, geometry, algebra, analysis and set theory.
PREREQUISITE: TWO COURSES IN MATHEMATICS AT THE 200 LEVEL OR ABOVE.

MTH504 Foundations of Geometry
3 credits
Fall Semester
Axiom systems and models of Euclidean and Non-Euclidean geometry.
PREREQUISITE: MTH 230 OR 309.

MTH505 Theory of Numbers
3 credits
Spring Semester
Divisibility, primes; congruences, quadratic residues and reciprocity; Diophantine equations. Applications to cryptography.
PREREQUISITE: MTH 210 OR 504.

MTH506 Mathematical Logic
3 credits
Offered By Announcement Only
Logics, truth, proof, logical consequence, model theory, formalization, and computation. Meta-theory of first-order logic, computability theory, and Godel’s incompleteness theorems. Related results by Church, Turing, and Tarski. Discussion of their philosophical significance.
PREREQUISITE: MTH 230

MTH510 Linear Algebra
3 credits
Spring Semester
Abstract vector spaces, bases and dimensions, linear maps, eigenvalues and eigenvectors, inner product spaces, operators, spectral theorems, canonical forms.
PREREQUISITE: MTH 210; TRANSITION COURSE IN LOGICAL REASONING SUCH AS MTH 230 OR 309 RECOMMENDED BUT NOT REQUIRED.

MTH512 Elementary Complex Analysis
3 credits
Spring Semester
Complex variables; conformal mapping, contour integration.
PREREQUISITE: MTH 211 OR 310.

MTH513 Partial Differential Equations I
3 credits
Fall Semester
Derivation, well posedness, and qualitative properties of initial value and boundary value problems for the heat, wave and Laplace equations. Energy methods, causality, maximum principles, heat kernels, Fourier series, and potential theory.
PREREQUISITE: MTH 210, 311 AND EITHER MTH 211 OR 310.

MTH514 Partial Differential Equations II
3 credits
Spring Semester
PREREQUISITE: MTH 513 OR PERMISSION OF THE INSTRUCTOR.
MTH515 Ordinary Differential Equations
3 credits  Fall Semester
Linear systems, equilibria and periodic solutions, stability analysis, bifurcation, phase plane analysis, boundary value problems, applications to engineering and physics.
PREREQUISITE: MTH 311 AND EITHER MTH 211 OR 310.

MTH516 Dynamics and Bifurcations
3 credits  Spring Semester
Bifurcation of equilibria and periodic solutions, global theory of planar systems, planar maps, nonlinear vibrations, forced oscillations, chaotic solutions, Hamiltonian systems, applications to engineering and physics.
PREREQUISITE: MTH 515 OR PERMISSION OF INSTRUCTOR.

MTH517 Data Structures and Algorithm Analysis
3 credits  Offered By Announcement Only
Data abstraction, formal specification, trees, B-trees, balanced binary trees, graphs, searching and sorting. Algorithm analysis. Memory management.
PREREQUISITE: MTH 309 (OR 230) AND CSC 220

MTH520 Numerical Analysis I
3 credits  Spring Semester
Topics from numerical linear algebra including solving systems of equations, LU, QR, and SVD factorizations, eigenvalues and eigenvectors, interactive methods and applications.
PREREQUISITE: MTH 320 OR PERMISSION OF DEPARTMENT CHAIRMAN.

MTH521 Numerical Analysis II
3 credits  Offered By Announcement Only
Numerical solution of ordinary and partial differential equations.
PREREQUISITE: MTH 320 OR 520 OR PERMISSION OF DEPARTMENT CHAIRMAN.

MTH524 Introduction to Probability Theory
3 credits  Fall Semester
Probability spaces, random variables, expectation, limit theorems.
PREREQUISITE: MTH 224 AND 310

MTH525 Introduction to Mathematical Statistics
3 credits  Spring Semester
Probability distributions, theory of sampling and hypothesis testing.
PREREQUISITE: MTH 524.

MTH527 Theory of Computing
3 credits  Offered By Announcement Only
Finite-state automata, context-free grammars, pushdown automata, Turing machines and computability.
PREREQUISITE: MTH 309 OR MTH 461

MTH528 Combinatorics
3 credits  Offered By Announcement Only
Permutations and combinations, generating functions, enumerative analysis.
PREREQUISITE: MTH 461 OR MTH 561
MTH531 Topology I
3 credits Fall Semester
Set theory, topological spaces, compactness, connectedness, separation properties, quotient spaces, Tychonoff Theorem, compactification, Urysohn Lemma and Tietze Extension Theorem, function spaces.
PREREQUISITE: MTH 230

MTH532 Topology II
3 credits Spring Semester
Differential and topological manifolds, classical groups and associated manifolds, tangent and tensor bundles, vector fields, differential forms, transversality, Sard's theorem, Stokes' Theorem.
PREREQUISITE: MTH 210 AND 531.

MTH533 Introduction to Real Analysis I
3 credits Fall Semester
Sequences and series in Euclidean space; sequences and series of functions; Fourier series; continuity, differentiation, and integration of functions between Euclidean spaces; implicit and inverse function theorems.
PREREQUISITE: MTH 230 AND MTH 310

MTH534 Introduction to Real Analysis II
3 credits Spring Semester
Continuation of MTH 533.
PREREQUISITE: MTH 533.

MTH540 Algorithm Design and Analysis
3 credits Offered By Announcement Only
Design techniques include divide-and-conquer, greedy method, dynamic programming, backtracking. Time and space complexity. Sorting, searching, combinatorial and graph algorithms.
PREREQUISITE: MTH 517 OR CSC 517

MTH542 Statistical Analysis
3 credits Fall Semester
Statistical inference about one or two populations from interval, ordinal and categorical data; analysis of variance; simple and multiple linear regression; designing research studies.
PREREQUISITE: MTH 210, 224

MTH551 Introduction to Differential Geometry
3 credits Fall Semester
Geometry of curves and surfaces in Euclidean space. Local space curve theory, intrinsic and extrinsic curvature of surfaces, geodesics, parallelism, and differential forms.
PREREQUISITE: MTH 210 AND EITHER MTH 211 OR 310

MTH561 Abstract Algebra I
3 credits Fall Semester
Groups; rings; linear algebra; modules.
PREREQUISITE: MTH 210 AND PERMISSION OF DEPARTMENT CHAIRMAN
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MTH562 Abstract Algebra II

3 credits                              Spring Semester
Continuation of MTH 561.
PREREQUISITE: MTH 561.

MTH571 Directed Readings in Mathematics

1- 3 credits                           Fall & Spring Semester
Readings in special topics.
PREREQUISITE: GRADUATE STANDING; PERMISSION OF DEPARTMENT CHAIR.

MTH572 Directed Readings in Mathematics

1- 3 credits                           Fall & Spring Semester
Readings in special topics.
PREREQUISITE: GRADUATE STANDING; PERMISSION OF DEPARTMENT CHAIR.

MTH591 Topics in Mathematics

1- 3 credits                           Offered By Announcement Only

MTH592 Topics in Mathematics

1- 3 credits                           Offered By Announcement Only

MTH593 Topics in Mathematics

1- 3 credits                           Offered By Announcement Only

MTH594 Topics in Mathematics

1- 3 credits                           Offered By Announcement Only
MIC301 Introduction to Microbiology and Immunology
0-5 credits  Spring Semester
Basic principles of microbiology and immunology, including laboratory exercises.
Course is required for microbiology and immunology majors; recommended for biology,
chemistry and biochemistry majors and those considering the health sciences.
PREREQUISITE: CHM 111 AND BIL 150/151

MIC302 Introduction to Microbiology and Immunology Honors Seminar
1 credit  Spring Semester
Special topics in Microbiology/Immunology requiring a term paper and/or an oral
presentation.
PREREQUISITE: CO-REQUISITE: MIC 301 HONORS AND MIC 301 LAB.

MIC303 Part 1 of 2: Introductory Microbiology and Immunology (Lecture)
3 credits  Spring Semester
PREREQUISITE: CHM 111, BIL 150, BIL 151

MIC304 Part 2 of 2: Introductory Microbiology and Immunology (Lab)
2 credits  Fall Semester
PREREQUISITE: CHM 111, BIL 150/151, MIC 303

MIC320 Introduction to Microbiology and Immunology for Nurses
3 credits  Spring Semester
Course covers the basic principles of microbiology and immunology. Course cannot
be used for MIC major or minor credit.
PREREQUISITE: CHM 103 AND BIL 150. OPEN TO NURSING STUDENTS ONLY.

MIC321 Immunobiology
3 credits  Fall Semester
Mechanisms underlying the cooperation between T-cells, B-cells, and antigens leading
to humoral and cell mediated responses. The significance of immune cells and their
products pertaining to autoimmunity, transplantation, and the surveillance of neoplastic
cells is covered.
PREREQUISITE: MIC 301.

MIC322 Medical Parasitology
3 credits  Spring Semester
Course discusses the biochemistry, physiology, pathogenicity, immunology, and mechanism
of drug action and resistance of medically important parasitic protozoa, trematodes,
nematodes, and cestodes.
PREREQUISITE: MIC 301.

MIC323 Principles of Microbial Pathogenesis
3 credits  Fall Semester
Course analyzes host-microbe relationships at the molecular and cellular levels
with an emphasis on microbial virulence determinants and host cell defense responses.
PREREQUISITE: MIC 301.

MIC421 Molecular Immunobiology
4 credits  Offered By Announcement Only
Techniques of Molecular Immunology.
PREREQUISITE: MIC 321.
MIC434 Microbial Genetics and Molecular Immunology
3 credits  Fall Semester
Course analyzes DNA replication, mutation, repair, recombination, jumping genes (transposons), infective hereditary mechanisms, gene regulation, protein synthesis, recombinant DNA technology, modern methods, and application of genetic engineering. Origin of antibody diversity, organization, and expression of antibody genes is included.
PREREQUISITE: MIC 301.

MIC436 Fundamental and Medical Virology
3 credits  Spring Semester
The study of viruses as biological entities and etiological agents of disease. Virus-cell and virus-host interactions are also discussed.
PREREQUISITE: MIC 301.

MIC441 Microbiology and Immunology Colloquium
1 credit  Fall & Spring Semester
External and internal faculty presentations as well as graduate presentations of recent advances in research. Course meets one hour per week.
PREREQUISITE: MIC 301

MIC451 Special Projects in Immunobiology
2-6 credits  Fall & Spring Semester
Laboratory research problems in major areas of immunobiology including literature search, experimental design, data gathering and evaluation of results.
PREREQUISITE: MAJOR IN MICROBIOLOGY AND IMMUNOLOGY, 17 CREDITS IN MICROBIOLOGY AND IMMUNOLOGY.

MIC452 Special Projects in Parasitology
2-6 credits  Fall & Spring Semester
Laboratory research problems in major areas of parasitology including literature search, experimental design, data gathering and evaluation of results.
PREREQUISITE: MAJOR IN MICROBIOLOGY AND IMMUNOLOGY, 17 CREDITS IN MICROBIOLOGY AND IMMUNOLOGY.

MIC453 Special Projects in Pathogenic Bacteriology
2-6 credits  Fall & Spring Semester
Laboratory research problems in major areas of pathogenic bacteriology including literature search, experimental design, data gathering and evaluation of results.
PREREQUISITE: MAJOR IN MICROBIOLOGY AND IMMUNOLOGY, 17 CREDITS IN MICROBIOLOGY AND IMMUNOLOGY.

MIC454 Special Projects in Microbial Genetics
2-6 credits  Fall & Spring Semester
Laboratory research problems in major areas of microbial genetics including literature search, experimental design, data gathering and evaluation of results.
PREREQUISITE: MAJOR IN MICROBIOLOGY AND IMMUNOLOGY, 17 CREDITS IN MICROBIOLOGY AND IMMUNOLOGY.

MIC455 Special Projects in Immunogenetics
2-6 credits  Fall & Spring Semester
Laboratory research problems in major areas of immunogenetics including literature search, experimental design, data gathering and evaluation of results.
PREREQUISITE: MAJOR IN MICROBIOLOGY AND IMMUNOLOGY, 17 CREDITS IN MICROBIOLOGY AND IMMUNOLOGY.
MIC456 Special Projects in Virology
2-6 credits  Fall & Spring Semester
Laboratory research problems in major areas of virology including literature search, experimental design, data gathering, and evaluation of results.
PREREQUISITE: MAJOR IN MICROBIOLOGY AND IMMUNOLOGY, 17 CREDITS IN MICROBIOLOGY AND IMMUNOLOGY.

MIC501 Medical Microbiology
5 credits  Offered By Announcement Only
Course discusses the nature of microbial agents of infectious disease as well. As relationship of virulence to host resistance and fundamental immunologic concepts. Microbial physiology and genetics, the structure, design, and mechanism of action on antimicrobials. are also.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

MIC523 Mechanisms of Microbial Virulence
2 credits  Spring Semester
This course will focus on the mechanisms employed by bacterial and viral pathogens to produce disease in animals and humans. The course is divided into two 3 week modules. The first module will cover bacterial pathogens with an emphasis on the bacteria-host cell interaction. Specific topics will include: bacterial attachment and invasion of eukaryotic cells, virulence gene regulation, and secretion of virulence factors, bacterial toxins and obligate intracellular bacterial pathogens. The second module will cover viruses and human viral diseases with an emphasis on viral replication, gene expression, virus-host cell interactions and viral oncology. Classes will consist of a mixture of lectures and discussions of recent or classic papers. There will be 2 exams.
MSL101 Basic Military Science  
0 - 2 credits  Fall Semester  
Introduction to Army organizations, military customs and courtesies, basic stationary and marching drills, basic map reading, land navigation, drown proofing, rappelling, river crossing techniques, physical fitness training, and practical exercises in field discipline. Requires outdoor leadership laboratory and at least one weekend field training exercise.

MSL102 Basic Military Science  
0 - 2 credits  Spring Semester  
Introduction to basic leadership principles and traits, army command and staff officer duties, awards, decorations, individual military tactics, field discipline, patrolling techniques, radio telephone procedures, rappelling and river crossing. Requires outdoor leadership laboratory and at least one weekend field training exercise.

MSL201 Basic Military Science  
0 - 2 credits  Fall Semester  
Instruction to squad and platoon marching drills, development of physical fitness training programs, conduct on military training and inspections, leadership techniques, advanced map reading, rappelling and river crossing techniques. Requires outdoor leadership laboratory and at least one weekend field training exercise.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MSL202 Basic Military Science  
0 - 2 credits  Spring Semester  
Continued instruction in drill and ceremonies, radio/telephone procedures, nuclear, biological, and chemical warfare, practical land navigation, orienteering, and introduction to combat troop leading procedures. Requires outdoor leadership laboratory and at least one weekend field training exercise.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MSL301 Basic Military Science  
0 - 3 credits  Fall Semester  
Classroom and field experience in leading squads and platoons in both garrison and combat environments. Basic rifle marksmanship and live fire of the M16A1 rifle. Practical exercises in combat troop leading procedures. Advanced physical fitness training to include endurance runs and tactical road marches.  
PREREQUISITE: PERMISSION OF DEPARTMENT.

MSL302 Advanced Military Science  
0 - 3 credits  Spring Semester  
Classroom instruction and field experience in combat troop leading procedures for offensive, defensive and patrolling missions. Advanced written and practical land navigation exercises. M16A1 rifle qualification. Company level drill and ceremonies to include manual of arms. Classroom and practical exercises on requests for artillery and mortar fires. Practical experience with training underclassmen in first aid and individual tactics.  
PREREQUISITE: PERMISSION OF DEPARTMENT.
MSL401 Advanced Military Science
0-3 credits  
Fall Semester
Instruction instills an uncompromising commitment to the Army Ethic, enhances thought processes and decision-making skills, and relates officer behavior to cadet leadership roles. Students are primarily responsible for the command and control of the cadet battalion for training purposes. Student's role is principally one of officer leader at the platoon (30 or more under classmen) and higher levels and cadet instructor/evaluator.
PREREQUISITE: PERMISSION OF DEPARTMENT.

MSL402 Advanced Military Science
0-3 credits  
Spring Semester
Capstone course in the preparation for a commission as a second lieutenant. The training is intended to solidify the commitment to officership, reinforce individual competencies, and afford maximum practical officer leader experiences through responsible leadership positions within the cadet battalion command and staff.
PREREQUISITE: PERMISSION OF DEPARTMENT.

MSL440 Studies in Military History
1-3 credits  
Fall & Spring Semester
Supervised readings and independent study in military history.
PREREQUISITE: PERMISSION OF DEPARTMENT.

MSL441 Studies in Military History
1-3 credits  
Fall & Spring Semester
Supervised readings and independent study in military history.
PREREQUISITE: PERMISSION OF DEPARTMENT.

MSL499 Independent Studies in U.S. Military History
3 credits  
Fall & Spring Semester
Supervised readings and independent study in United States Military History. Writing requirements.
PREREQUISITE: DEPARTMENT APPROVAL REQUIRED.

MODERN LANGUAGES & LITERATURES

MLL321 Topics in Literary and Cultural Studies
0-3 credits  
Fall & Spring Semester
Comparative topics in the study of literature and culture. Specific topics vary; may be repeated for credit if topics differ. Taught in English.
PREREQUISITE: THREE CREDITS IN LITERATURE

MLL322 Special Topics: Travel Writers, Photographers & Filmmakers: How they Want us to
3 credits  
Second Summer Session
Through textual and visual media, this course reflects on travel representations from cultural and formal perspectives. More specifically, we'll explore the works of important travel writers (Theroux, While), renowned photo-reporters (Salgado, Reza) and maybe less known documentaries (Kramer, Melroz).
MLL404 Language in Society
3 credits Fall Semester
Overview of ideological, social, political, economic, and cultural issues of language in society, and the principle linguistic concepts and methodologies that guide research on those issues. Language variation, social dialectology, multilingualism, interaction and interpersonal communication, gender, language and power, language policy and planning, and globalization are highlighted. The main focus of the course (at least 80%) will be on non-English languages—in particular, those taught in MLL.
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR

MLL597 Readings for the Ph.D. Examinations
1- 3 credits Offered By Announcement Only
For Ph.D. students who are preparing for exams.
PREREQUISITE: PERMISSION OF DIRECTOR OF GRADUATE STUDIES

MLL599 Internship
1 credit Offered By Announcement Only
Students work in a community or business setting on issues related to language, culture, and/or teaching.
NEU120 Orientation to the Study of Neuroscience II: FORUM  
1 credit  
Spring Semester  
Critical discussion of research in neuroscience. 
PREREQUISITE: ONLY FIRST YEAR NEUROSCIENCE MAJORS. COUNTS AS ELECTIVE CREDIT.

NEU342 Neural Mechanisms of Disease  
3 credits  
Fall & Spring Semester  
Cellular and molecular mechanisms underlying nervous system dysfunction and mental illness. Biological bases, including clinical and therapeutic aspects, of specific neurological disorders. 
PREREQUISITE: BIL 268 OR PSY 202

NEU367 Introduction to Research Projects I  
1-3 credits  
Fall & Spring Semester & First & Second Summer Session  
Students assist on a research project under supervision of a faculty member. Activities include library research, data collection and management, and attendance at research team meetings. 
PREREQUISITE: 6 CREDITS IN BIOLOGY OR PSYCHOLOGY. SECOND SEMESTER AND SOPHOMORE STANDING. STUDENTS MUST OBTAIN FACULTY SPONSORSHIP IN WRITING PRIOR TO REGISTRATION. FORMS ARE AVAILABLE IN UNDERGRADUATE ACADEMIC SERVICES FOR PSYCHOLOGY, FLIPSE 508. OVERRIDE BY DIRECTOR OF UNDERGRAD. STUDIES IN PSYCHOLOGY REQUIRED.

NEU368 Introduction to Research Projects II  
1-3 credits  
Fall & Spring Semester & First & Second Summer Session  
Students assist on a research project under supervision of a faculty member. Activities include library research, data collection and management, and attendance at research team meetings. 
PREREQUISITE: STUDENTS MUST OBTAIN FACULTY SPONSORSHIP IN WRITING, PRIOR TO REGISTRATION. FORMS ARE AVAILABLE IN UNDERGRADUATE ACADEMIC SERVICES FOR PSYCHOLOGY, FLIPSE 508 OVERRIDE BY DIRECTOR OF UNDERGRADUATE STUDIES IN PSYCHOLOGY REQUIRED.

NEU403 Neuroscience laboratory  
4 credits  
Fall & Spring Semester  
Research methods and laboratory experiments in contemporary neuroscience from individual cells to behavior. Scientific report writing and computer applications in experimental design and analysis. 
PREREQUISITE: PSY 316; PSY 402 OR BIL 268. USUALLY LIMITED TO NEUROSCIENCE GRADUATING SENIORS. PERMISSION REQUIRED FROM DIRECTOR OF UNDERGRADUATE STUDIES IN PSYCHOLOGY.

NEU465 Cellular and Molecular Neuroscience  
3 credits  
Fall & Spring Semester  
Biophysical, biochemical, and structural features of nerve muscle and sensory cells. Basic cellular processes underlying function and development of nervous system. 
PREREQUISITE: BIL 255, CHM 202, PSY 202, OR BIL 268

NEU468 Developmental Neuroscience.  
3 credits  
Spring Semester  
Cellular and molecular aspects of nervous system including neuronal differentiation. 
PREREQUISITE: BIL 255; BIL 268 OR PSY 202; CHM 202

NEU498 Senior Honors Thesis in Neuroscience II  
3 credits  
Fall & Spring Semester & First & Second Summer Session  
Independent research project. 
PREREQUISITE: PERMISSION OF FACULTY MENTOR AND DIRECTOR OF UNDERGRADUATE STUDIES IN PSYCHOLOGY REQUIRED.
NEU499 Senior Honors Thesis in Neuroscience I
3 credits  Fall & Spring Semester
PREREQUISITE: 18 CREDITS IN MAJOR, PSY 316 AND ELIGIBILITY FOR HONORS IN NEUROSCIENCE.
PHI101 Introduction to Philosophy  
3 credits  
Fall & Spring Semester & First Summer Session  
Problems concerning knowledge, mind, freedom, religion, and morality. Reading and discussion of primary sources.

PHI110 Critical Thinking  
3 credits  
Fall & Spring Semester  
Principles of sound reasoning; the construction and evaluation of arguments in everyday contexts and the assessment of evidence.

PHI115 Social and Ethical Issues in Computing  
3 credits  
Spring Semester  
History, social context and methods and tools of analysis. Professional and ethical responsibilities. Intellectual property. Privacy and civil liberties.

PHI130 Contemporary Moral Issues  
3 credits  
Fall & Spring Semester & First Summer Session  
An examination of the philosophical problems which arise in connection with such moral and social issues as abortion, war, suicide, civil disobedience, racial discrimination, the death penalty, and the right to privacy.

PHI210 Symbolic Logic  
3 credits  
Fall Semester & First Summer Session  
Introduction to symbolic logic and its methods.

PHI215 Logic and Law  
3 credits  
Spring Semester  
Principles and techniques of logic applied to legal reasoning.

PHI236 Feminist Philosophy  
3 credits  
Fall & Spring Semester  
This course is an introduction to issues in feminist philosophy, including its critique of Western philosophy and its contributions to major areas of philosophy such as ethics, social philosophy, theories of human nature, and theories of knowledge. Theories of oppression introduced at the beginning of the course inform analyses of sexism, heterosexism, racism, classism and ableism, and philosophizing about their "isms" is aided by sociocultural research. The emphasis is not only on what is contained in these topics, but also on how to think critically about them.  
PREREQUISITE: THREE CREDITS IN PHILOSOPHY OR SOPHOMORE STANDING

PHI241 History and Philosophy of Science  
3 credits  
Spring Semester  
PREREQUISITE: ENG 245

PHI271 Ancient Philosophy  
3 credits  
Fall Semester  
Ancient Greek, Hellenistic, Roman, and early Christian (Patristic) philosophy with emphasis on its contribution to Western culture.  
PREREQUISITE: THREE CREDITS IN PHILOSOPHY OR SOPHOMORE STANDING.

PHI272 Modern Philosophy  
3 credits  
Spring Semester  
The Renaissance through Kant.  
PREREQUISITE: THREE CREDITS IN PHILOSOPHY OR SOPHOMORE STANDING.
PHI330 Ethics
3 credits
Fall & Spring Semester
The main ethical systems and ethical concepts, an analysis of important ethical readings, and an application of ethical concepts to the individual and to society.
PREREQUISITE: THREE CREDITS IN PHILOSOPHY OR PERMISSION OF INSTRUCTOR.

PHI331 Social and Political Philosophy
3 credits
Offered By Announcement Only
Relations between morality and politics, the sources and the limits of political obligation, the function of the state, the nature of law, civil disobedience and revolution.
PREREQUISITE: THREE CREDITS IN PHILOSOPHY.

PHI332 Philosophy of Law
3 credits
Offered By Announcement Only
An examination of basic philosophical issues concerning the nature and function of law, with particular attention to the legal system of the United States.
PREREQUISITE: THREE CREDITS IN PHILOSOPHY.

PHI333 Philosophical foundations of criminal law
3 credits
Offered By Announcement Only
Philosophical examination of questions concerning the purpose, scope and limits of criminal law and the justification of punishment.
PREREQUISITE: THREE CREDITS IN PHILOSOPHY OR PERMISSION OF INSTRUCTOR.

PHI334 Biomedical Ethics
3 credits
Offered By Announcement Only
Fundamental issues including: the allocation of medical resources, behavior control, definition of death, experimentation with human subjects, euthanasia, and abortion.
PREREQUISITE: THREE CREDITS IN PHILOSOPHY.

PHI335 Professional Ethics
3 credits
Offered By Announcement Only
Moral issues in business, engineering, law, and medicine. Development of moral principles to guide those in professional roles.
PREREQUISITE: THREE CREDITS IN PHILOSOPHY OR PERMISSION OF INSTRUCTOR.

PHI336 Human Rights
3 credits
Offered By Announcement Only
This course offers philosophical, legal, and political perspectives on human rights. After a short introduction to international human rights, it surveys international human rights treaties and institutions. Next it turns to topics in human rights theory, covering some contemporary philosophical theories of human rights. The final section explores some human rights problems and controversies.
PREREQUISITE: 3 CREDITS IN PHILOSOPHY, OR PERMISSION FROM INSTRUCTOR.

PHI340 Theory of Knowledge
3 credits
Offered By Announcement Only
Analysis of the nature, sources and structure of knowledge. Possible topics include perception, skepticism, reason, truth, justification, and certainty.
PREREQUISITE: PHI 110 OR 210.
PHI341 Philosophy of Language
3 credits
Theories of meaning, reference, predication, nature of signs and symbols, types and functions of discourse.
PREREQUISITE: THREE CREDITS IN PHILOSOPHY.

PHI343 Philosophy of Science
3 credits
Scientific theories and their relation to evidence; experimentation and its logic; explanation, the rationality of science and the growth of scientific knowledge.
PREREQUISITE: PHI 110 OR 210.

PHI344 Philosophy of Mind
3 credits
The nature of mind and mental acts, events, and states and their relations to physical states of the brain and body and to behavior.
PREREQUISITE: THREE CREDITS IN PHILOSOPHY.

PHI345 Metaphysics
3 credits
The basic structure and kinds of constituents of the world.
PREREQUISITE: THREE CREDITS IN PHILOSOPHY OR JUNIOR STANDING.

PHI346 Philosophy of Mathematics
3 credits
PREREQUISITE: 3 CREDITS IN PHILOSOPHY, COMPLETED UNIVERSITY GENERAL EDUCATION REQUIREMENTS IN MATHEMATICS, OR PERMISSION FROM INSTRUCTOR

PHI349 Philosophy of Space and Time
3 credits
Fall & Spring Semester
Time and space are notoriously difficult to think about. We seem to have an intuitive understanding of them, but it is surprisingly hard to express that understanding. To make matters worse, modern physics challenges what little grasp we thought we had on the concepts of space and time. We are told that space can be curved, and that there can fail to be an objective fact about which of two events occurred first. So we are left without even an intuitive grasp of two of the most fundamental concepts of experience.
PREREQUISITE: 3 CREDITS IN PHILOSOPHY OR PERMISSION FROM INSTRUCTOR

PHI351 Philosophy of Religion
3 credits
The nature of and grounds for religious beliefs; traditional arguments for and against the existence of God; God’s attributes; reason vs. faith.
PREREQUISITE: THREE CREDITS IN PHILOSOPHY.

PHI352 Aesthetics
3 credits
The philosophy of art, such as defining 'art', adjudicating among competing judgments or interpretations of works of art, and understanding the metaphysical status of art objects.
PREREQUISITE: THREE CREDITS IN PHILOSOPHY OR PERMISSION OF INSTRUCTOR.
PHI353 Philosophy of Film
3 credits
Fall & Spring Semester
Philosophical questions concerning the ontology and aesthetics of film.
PREREQUISITE: 3 CREDITS IN PHILOSOPHY, OR PERMISSION FROM INSTRUCTOR.

PHI354 Philosophy of Literature
3 credits
Offered By Announcement Only
Central philosophical issues concerning literature and the evaluation of literary works.
PREREQUISITE: 3 CREDITS IN PHILOSOPHY, COMPLETION OF UNIVERSITY GENERAL EDUCATION REQUIREMENT IN LITERATURE, OR PERMISSION FROM INSTRUCTOR

PHI373 Nineteenth Century Philosophy
3 credits
Offered By Announcement Only
Fichte, Schelling, Hegel, Schopenhauer, Kierkegaard, Marx, Comte, Mill, Spencer, and Nietzsche.
PREREQUISITE: THREE CREDITS IN PHILOSOPHY.

PHI374 Twentieth Century Philosophy
3 credits
Offered By Announcement Only
Philosophy and philosophers in the twentieth century.
PREREQUISITE: THREE CREDITS IN PHILOSOPHY.

PHI381 Existentialism
3 credits
Offered By Announcement Only
Existentialist philosophy as seen in the works of such authors as Kierkegaard, Nietzsche, Heidegger, Sartre, Camus, and Dostoevsky.
PREREQUISITE: THREE CREDITS IN PHILOSOPHY.

PHI391 Special Studies
3 credits
Offered By Announcement Only
Study of selected problems, philosophers, or movements. May be repeated for credit.
PREREQUISITE: THREE CREDITS IN PHILOSOPHY.

PHI392 Special Studies
3 credits
Offered By Announcement Only
Study of selected problems, philosophers, or movements. May be repeated for credit.
PREREQUISITE: THREE CREDITS IN PHILOSOPHY.

PHI494 Independent Study in Philosophy
3 credits
Offered By Announcement Only
Independent research conducted under the guidance of a faculty member. May be repeated for credit.
PREREQUISITE: SIX CREDITS IN PHILOSOPHY AND PERMISSION OF INSTRUCTOR.

PHI495 Senior Honors Thesis
3 credits
Offered By Announcement Only
Directed reading and a substantial and scholarly paper.
PREREQUISITE: SENIOR STANDING AND ENROLLMENT IN THE DEPARTMENTAL HONORS PROGRAM.

PHI496 Senior Honors Thesis
3 credits
Offered By Announcement Only
PREREQUISITE: PHI 495.
PHI506 Mathematical Logic
3 credits
Offered By Announcement Only
PREREQUISITE: PHI 210 OR PHI 510

PHI510 Formal Logic
3 credits
Spring Semester
First and second-order quantification theory; metalogic.

PHI530 Ethical Theory
3 credits
Offered By Announcement Only
G. E. Moore to the present.
PREREQUISITE: THREE COURSES AT THE 200 LEVEL OR ABOVE, INCLUDING PHI 210 AND 330.

PHI533 Political Philosophy
3 credits
Offered By Announcement Only
A survey of some central issues and developments in political philosophy.
PREREQUISITE: THREE COURSES AT THE 200 LEVEL OR ABOVE, INCLUDING PHI 210 AND 330.

PHI540 Epistemology
3 credits
Offered By Announcement Only
A survey of the basic topics and questions in epistemology: knowledge acquisition and justification, perception, fallibilism, and skepticism.

PHI541 Mind and Language
3 credits
Offered By Announcement Only
Philosophical problems about signs, linguistic and mental representations, intentionality, action, and consciousness.

PHI543 Induction, Probability, and Scientific Method
3 credits
Offered By Announcement Only
Foundations of inductive reasoning and role of experiment in science.

PHI545 Metaphysics
3 credits
Offered By Announcement Only
A selection of topics dealing with the main problems of metaphysics: existence, modality, universals, identity and persistence through time, causation, the self and physicalism.

PHI546 Evidence and Knowledge in Medicine
3 credits
Spring Semester
Basic methodologies in medicine in the context of philosophical theories of evidence.
PREREQUISITE: 2 COURSES IN PHI, OR PERMISSION FROM INSTRUCTOR
PHI555 Philosophy of Education
3 credits
Fall Semester
Problems concerning the nature and aims of education.

PHI560 History of Logic
3 credits
Fall & Spring Semester
Aristotle, the Stoics, the Scholastics, Leibniz, Boole, DeMorgan, Peirce, Frege, and Russell and Whitehead.

PHI562 History of Ethics
3 credits
Offered By Announcement Only
A selection of ethical theories from Aristotle to Rawls.
PREREQUISITE: THREE COURSES AT THE 200 LEVEL OR ABOVE, INCLUDING PHI 210 AND 330.

PHI570 Pre-Socratics and Plato
3 credits
Offered By Announcement Only
Fragments from the Pre-socratics and the dialogues of Plato.
PREREQUISITE: THREE COURSES AT THE 200 LEVEL OR ABOVE, INCLUDING PHI 210 AND 271.

PHI571 Aristotle and Hellenistic Philosophy
3 credits
Offered By Announcement Only
A survey of central philosophical topics in Aristotle and Hellenistic Philosophers (Epicureans, Stoics, and Skeptics).
PREREQUISITE: THREE COURSES AT THE 200 LEVEL OR ABOVE, INCLUDING PHI 210 AND 271.

PHI572 Medieval Philosophy
3 credits
Offered By Announcement Only
The patristic period through the scholasticism of the late middle ages.

PHI573 Early Modern Philosophy
3 credits
Offered By Announcement Only
An examination of early modern philosophy from Hobbes and Descartes to Hume.
PREREQUISITE: THREE COURSES AT THE 200 LEVEL OR ABOVE, INCLUDING PHI 210 AND 272.

PHI575 Kant
3 credits
Offered By Announcement Only
An examination of selected issues in Kant's theoretical or practical philosophy.
PREREQUISITE: THREE COURSES AT THE 200 LEVEL OR ABOVE, INCLUDING PHI 210 AND 272.

PHI581 Pragmatism
3 credits
Offered By Announcement Only
Peirce, James, Dewey, and others.
PHI582 History of Analytic Philosophy
3 credits
Offered By Announcement Only
The development of analytic philosophy from its beginnings in the work of Frege and Russell through logical positivism to contemporary philosophy.

PHI583 The Phenomenological Tradition
3 credits
Offered By Announcement Only
An examination of the phenomenological movement (Edmund Husserl, Martin Heidegger, Maurice Merleau-Ponty, and others) and of its impact on contemporary thought.

PHI591 Special Topics
3 credits
Offered By Announcement Only
A selected philosopher or philosophical problem. May be repeated for credit.
PREREQUISITE: SIX CREDITS IN PHILOSOPHY AND JUNIOR STANDING.

PHI592 Special Topics
3 credits
Offered By Announcement Only
A selected philosopher or philosophical problem. May be repeated for credit.
PREREQUISITE: SIX CREDITS IN PHILOSOPHY AND JUNIOR STANDING.

PHI593 Special Topics
3 credits
Offered By Announcement Only
A selected philosopher or philosophical problem. May be repeated for credit. Prerequisite: Six credits in Philosophy and junior standing.
PREREQUISITE: SIX CREDITS IN PHILOSOPHY AND JUNIOR STANDING

PHI594 Independent Study in Philosophy
1-3 credits
Offered By Announcement Only
Directed reading on a topic or philosopher. May be repeated for credit.
PREREQUISITE: SIX CREDITS IN PHILOSOPHY AND JUNIOR STANDING.

PHYSICAL SCIENCE
PSC101 Physical Science
3 credits
Fall & Spring Semester
An interdisciplinary course to provide the non-science major with an understanding of some of the methods, ideas and accomplishments of Physics, Astronomy, Chemistry, Geology, and their role in the development of civilization.
PREREQUISITE: NOT FOR MAJOR OR MINOR

PHYSICS
PHY101 College Physics I
0-4 credits
Fall & Spring Semester & First Summer Session
Elementary mechanics, thermal phenomena, fluids, waves. Courses 101-102-106-108 provide a ten credit 'physics with lab' sequence for premedical students and others.
PREREQUISITE: MTH 108 OR 105.

PHY102 College Physics II
0-4 credits
Fall & Spring Semester & First & Second Summer Session
Electromagnetism, optics, and modern physics.
PREREQUISITE: PHY 101.
PHY103 General Physics

3 credits  
Spring Semester 
Mechanics, waves, electromagnetism. 
PREREQUISITE: ARCHITECTURE MAJOR.

PHY106 College Physics Laboratory I

1 credit  
Fall & Spring Semester & First Summer Session 
Laboratory course to accompany PHY 101. 
PREREQUISITE: PREREQUISITE OR COREQUISITE: PHY 101.

PHY108 College Physics Laboratory II

1 credit  
Fall & Spring Semester & First & Second Summer Session 
Laboratory course to accompany PHY 102. 
PREREQUISITE: PREREQUISITE OR COREQUISITE: PHY 102.

PHY110 Descriptive Astronomy

3 credits  
Fall & Spring Semester 
For students not majoring in Mathematics or a Physical Science. A brief non-technical treatment of the universe and its contents. Mathematical requirements are minimal with emphasis on our present knowledge about energy and matter in space. Not for major or minor. 
PREREQUISITE: NOT FOR MAJOR OR MINOR.

PHY160 Physics of the Arts

3 credits  
Spring Semester 
Newtonian mechanics, energy, wave motion, atoms, and electricity. Applications to music, art and communications.

PHY201 University Physics I. Life Sciences

0-4 credits  
Fall Semester 
Calculus based introductory physics: mechanics, heat, fluids, waves, with applications from the life sciences. 
PREREQUISITE: MTH 162 OR 172.

PHY202 University Physics II - Life Sciences.

0-4 credits  
Fall Semester & First Summer Session 
Calculus based introductory physics: electromagnetism, optics, modern physics, with applications from the life sciences. 
PREREQUISITE: PHY 201.

PHY205 University Physics I

0-3 credits  
Fall & Spring Semester & First Summer Session 
Mechanics through gravity and harmonic motion, intended for science and engineering students. 
PREREQUISITE: OR CO-REQUISITE MTH 151 OR 141, WITH A "B" IN MTH 105 OR 108 OR PLACEMENT INTO CALCULUS BY MTH PLACEMENT EXAM. OTHERWISE, PRE-REQUISITE: MTH 151, 161, 171, OR 141.

PHY206 University Physics II

0-3 credits  
Fall & Spring Semester & Second Summer Session 
Fluids, waves, optics, thermal phenomena. 
PREREQUISITE: PHY 205. PRE OR CO-REQUISITE: MTH 162 OR 172.
PHY207 University Physics III
  0-3 credits Fall & Spring Semester & First Summer Session
  Electromagnetism through Maxwell's equations.
  PREREQUISITE: PHY 205; MTH 162 OR 172

PHY208 University Physics II Lab
  1 credit Fall & Spring Semester & Second Summer Session
  Laboratory to accompany PHY 206.
  PREREQUISITE: PREREQUISITE OR COREQUISITE: PHY 206.

PHY209 University Physics III Lab
  1 credit Fall & Spring Semester & First Summer Session
  Lab to accompany PHY 207.
  PREREQUISITE: PREREQUISITE OR COREQUISITE: PHY 207.

PHY210 Honors University Physics II-III
  5-6 credits Fall & Spring Semester
  Fluids, waves, optics, thermal phenomena, electromagnetism. Combines PHY 206 and 207.
  PREREQUISITE: PHY 205; MTH 162 OR 172, AND WRITTEN PERMISSION

PHY315 Mathematical Tools for Physics
  3 credits Spring Semester
  How to use mathematics. Series, complex algebra, vector analysis, differential equations, etc.
  PREREQUISITE: PHY 207, MTH 211 OR MTH 310; PRE-OR COREQUISITE: MTH 311.

PHY316 Physics of the Solar System
  3 credits Offered By Announcement Only
  A mathematical treatment of the structure and composition of the solar system.
  The physical nature of the sun, planets, satellites, comets, and meteors. Occasional observation sessions will be scheduled.
  PREREQUISITE: PHY 206, 207.

PHY317 Physics of Stellar Systems
  3 credits Offered By Announcement Only
  Normal and peculiar stars: their structure and evolution. Galactic structure and some cosmology. Occasional observation sessions will be scheduled.
  PREREQUISITE: PHY 206, 207.

PHY321 Thermodynamics and Kinetic Theory
  3 credits Spring Semester
  An intermediate course in thermal phenomena, from both macroscopic and microscopic points of view.
  PREREQUISITE: PHY 206 AND MTH 211 OR 310

PHY340 Classical Mechanics I
  3 credits Fall Semester
  Includes harmonic motion, orbit theory, coupled oscillations, rigid body motions.
  PREREQUISITE: PHY 206, 207. PRE OR CO-REQUISITE: MTH 210, 311
PHY350 Intermediate Electricity and Magnetism  
3 credits  
Fall Semester  
Includes the integral and differential forms of Maxwell's equations, circuit theory, and boundary value problems.  
PREREQUISITE: PHY 206, 207, MTH 211 OR 310. PREREQUISITE OR COREQUISITE: MTH 311.

PHY351 Intermediate Electricity and Magnetism II  
3 credits  
Spring Semester  
A continuation of PHY 350. Includes further application of Maxwell's equations with emphasis on radiation theory.  
PREREQUISITE: PHY 350.

PHY360 Introduction to Modern Physics  
3 credits  
Fall & Spring Semester  
Emphasis on the experimental foundations of modern physics. Relativity, quantization, atomic structure, radiation, nuclei.  
PREREQUISITE: PHY 206. PREREQUISITE OR COREQUISITE: PHY 207.

PHY362 Modern Physics Honors Seminar  
1 credit  
Fall & Spring Semester  
Special Topics to accompany PHY 360. Co requisite: PHY 360.  
PREREQUISITE: COREQUISITE: PHY 360.

PHY401 Senior Thesis  
3 credits  
Offered By Announcement Only  

PHY402 Senior Thesis  
3 credits  
Offered By Announcement Only  

PHY500 Research  
1-3 credits  
Offered By Announcement Only  
Project course introducing methods of research, individual investigation of current problems.

PHY505 Advanced Laboratory  
1-2 credits  
Fall Semester  
Advanced experiments such as properties of the electron, optical spectra, electrical measurements, radioactive decay, absorption, etc.  
PREREQUISITE: PHY 208. PREREQUISITE OR COREQUISITE: PHY 360.

PHY506 Advanced Laboratory  
1-2 credits  
Spring Semester  
Advanced experiments such as properties of the electron, optical spectra, electrical measurements, radioactive decay, absorption, etc.  
PREREQUISITE: PHY 208. PREREQUISITE OR COREQUISITE: PHY 360.

PHY515 Mathematical Techniques in Physics  
3 credits  
Spring Semester  
Complex variables and applications. Infinite series and their uses, particularly in differential equations. Multiple integrals and Fourier series.  
PREREQUISITE: PHY 206, 207; MTH 311, AND 310 OR 312.
PHYSICS

PHY516 Readings in Physics  
1- 3 credits  
Fall & Spring Semester  
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

PHY517 Readings in Physics  
1- 3 credits  
Spring Semester  
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

PHY518 Readings in Physics  
1- 3 credits  
Offered By Announcement Only  
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

PHY520 Solid State Physics  
3 credits  
Offered By Announcement Only  
Crystal structure, quantum theory of the electronic structure of solids, mechanical, electric, magnetic and optical properties of solids.  
PREREQUISITE: PHY 560.

PHY530 Plasma Physics I  
3 credits  
Offered By Announcement Only  
Kinetic theory of plasmas, adiabatic motion of charged particles magnetofluid dynamics, transport properties of plasmas in electromagnetic fields.  
PREREQUISITE: PHY 340, 351, 360.

PHY540 Classical Mechanics II  
3 credits  
Fall Semester  
Lagrangian formulation, rigid body dynamics. Topics selected from fluid dynamics, non-linear oscillations, normal modes, phase plane analysis.  
PREREQUISITE: PHY 340.

PHY545 Introduction to Astrophysics  
3 credits  
Offered By Announcement Only  
celestial mechanics, solar models, galaxies, distance scales, instruments.  
PREREQUISITE: PHY 360 AND ANOTHER 3 CREDIT 300 LEVEL PHYSICS COURSE.

PHY552 Optical Physics  
3 credits  
Offered By Announcement Only  
Geometric optics, interference and diffraction, polarized light, optical pumping, coherence phenomena, applications to modern physical research.  
PREREQUISITE: PHY 351, 360.

PHY560 Quantum Mechanics and Modern Physics I  
3 credits  
Fall Semester  
Introductory theory with applications to simple systems. Perturbation theory and atomic structure.  
PREREQUISITE: PREREQUISITE OR COREQUISITE: PHY 350.

PHY561 Quantum Mechanics and Modern Physics II  
3 credits  
Spring Semester  
Applications of quantum mechanics to atomic and molecular spectroscopy, quantum statistical mechanics, and nuclear physics.  
PREREQUISITE: PHY 560.
POL199 UMinDC Introduction to American National Government  
6 credits  
Fall Semester

POL201 Introduction to American National Government  
3 credits  
Fall & Spring Semester & First & Second Summer Session
Examination of the principles, structures, and processes of the national government of the United States. Frequent comparisons made with others countries.

POL202 Introduction to Comparative Politics  
3 credits  
Fall & Spring Semester & First & Second Summer Session
This course examines how countries around the world, democracies (established and new) and authoritarian regimes are governed. The different ways in which, and the different degrees to which, governments intervene in the economy.

POL203 Introduction to International Relations  
0-3 credits  
Fall & Spring Semester & Second Summer Session
Introduction to the theory and practice of international relations. Analyzes the modern state system; globalization; diplomacy and negotiation, balance of power considerations.
PREREQUISITE: NONE

POL204 POL 203 Discussion Section  
0 credit  
Fall & Spring Semester

POL205 POL 203 Discussion Section  
0 credit  
Fall & Spring Semester

POL213 Government and Society  
3 credits  
Offered By Announcement Only
Examination of such key issues as the role of business in society, the nature of corporate responsibility, business ethics practices, and the interactive roles of government and business in a global society. Not for major or minor credit.
PREREQUISITE: POL 211.

POL250 Scope and Methods of Political Science  
3 credits  
Offered By Announcement Only
The basic skills needed in political science to critically read academic journal articles and books. The application of scientific methods to the study of public life, focusing on research design and introducing students to the various methodologies used by researchers to draw descriptive and causal inference about the political world. Some methods introduced include ethnography, experimentation, the case study, and survey research.
PREREQUISITE: POL 20, 202, OR 203

POL305 Introduction to Political Theory  
3 credits  
Offered By Announcement Only
Survey and analysis of political theories from Plato to the present. Topics include competing ideas on the organization of human communities, morality, and justice. Illumination of traditional political thought with more recent insights and concepts that question previous theories on the nature of the self, the scope of rationality, and social organization.
PREREQUISITE: POL 201, 202, OR 203
POL306 Positive Political Theory
3 credits
Offered By Announcement Only
Introduction to positive political theory as a study of politics using quantitative methods such as game theory, laboratory experiments, and computer simulation. The political agents involved in a given interaction are modeled as rational players guided by self-interest whose behavior can be formally explained or predicted.

POL307 Political Ideologies
3 credits
Offered By Announcement Only
Covers modern and contemporary political ideologies, such as Liberalism, Conservativism, and Marxism.
PREREQUISITE: POL 201, 202 OR 203

3 credits
Offered By Announcement Only
Tracks the roles of power and morality in the political cultures of Great Britain, including the use of force in national security policies, the moral and political framing of global terrorism, the deployment of human rights to address recent global issues (like genocide), and the influence of religion in contemporary British politics.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

POL309 American Political Thought
3 credits
Offered By Announcement Only
This class traces the evolution of democratic thinking in America. Topics include the meaning of representation, citizenship, equality and liberty.
PREREQUISITE: POL 201

POL310 God, Science, and Politics
3 credits
Fall Semester
A study of morality and religion that addresses the competing influences of material and spiritual discourses on political regimes and practices. The talking points for the course include the various proofs and refutations offered throughout history of God's existence, the differences and similarities of scientific and religious approaches to experience, and the ways in which moral and religious principles enlighten politics as they fold into the vocabularies of natural law and right, and contaminate the political with religious violence in the name of God.
PREREQUISITE: POL 201 OR POL 202 OR POL 203 OR REL 101 OR PHI 101

POL311 Conspiracy Theories and the Public
3 credits
Spring Semester
PREREQUISITE: POL 201

POL313 The Constitution
3 credits
Fall Semester
The major concepts and theories regarding the U.S. Constitution and other important American political documents.
PREREQUISITE: POL 201
POL314 Legislative Processes
3 credits  
Spring Semester
Examination and analysis of the United States Congress. Emphasis on internal structure and operations, congressional roles and procedures, party leadership, external influences on congress, and incentives for congressional behavior.
PREREQUISITE: POL 201

POL315 American Presidency
3 credits  
Offered By Announcement Only
Historic development of presidential power; sources of the powers of the modern presidency, institutional decision-making; how and to what degree presidential power should be controlled.
PREREQUISITE: POL 201

POL321 Public Policy and Administration
3 credits  
Fall & Spring Semester
Analysis of justification for government policies, and specifically of situations where private sector institutions fail to achieve the socially optimal level of a good or service. Identifies the general type of government policies and which of these policies are appropriate for the various problems. Explores the likelihood that policies will be successful and the way the political process shapes the final choice and implementation of government policies.
PREREQUISITE: POL 201

POL322 Environmental Politics and Policy
3 credits  
Fall Semester & First Summer Session
Examines the federal government's policies toward the National Forests and public grasslands; water supply policies and politics of the Everglade and Far West; global warming; U.S. air and water pollution policies and politics as well as those related to waste management; U.S. energy policies; and trade and the environment.
PREREQUISITE: POL 201 OR POL 203.

POL323 Global Warming, Politics and the European Union
6 credits  
First & Second Summer Session
The European Union (EU) and especially France to ecologically modernize their advanced economies. The course will treat the EU effort to fashion an international agreement on climate change. This class in conducted in Paris, France.
PREREQUISITE: THREE (3) CREDITS IN THE SOCIAL SCIENCES.

POL332 Mass Media and Politics
3 credits  
Offered By Announcement Only
Role of media in American politics. Historical development of the media from newspapers, through radio, to television and new media such as the internet. Changing norms of news media reportage. The growth of political advertising both during and between elections; the effects of these developments on American government and on the public.
PREREQUISITE: POL 201
POL334 Campaigns
3 credits
Offered By Announcement Only
Students learn about political campaigns by becoming involved in an active campaign and studying the academic literature about elections and campaigns. Topics are media, campaign organization, voters, issues, political parties, elections, and the five elements of every campaign.
PREREQUISITE: POL 201

POL335 Local Government
3 credits
Offered By Announcement Only
Examination of city and county governments and politics. Focuses on structures, leadership, taxing and spending, the influence of state and federal governments, and "hot-button" issues of importance to South Florida communities.
PREREQUISITE: POL 201

POL337 International Law and Organizations
3 credits
Offered By Announcement Only
This course focuses on the interaction of states through various legal regimes. We will consider the role of international law and organizations in politics, and the political implications of both criminal and civil international law from the perspective of the state, the individual and non-governmental actors. Readings, lectures, class discussions, and examinations will familiarize the students with the parameters and limitations as well as the policy and practice of international law.
PREREQUISITE: POL 203

POL342 State and Local Government and Politics
3 credits
Offered By Announcement Only
State constitutions, political parties, legislatures, executive court systems, administrative systems and services, financial problems, city and county governments, local-state, federal-state and interstate relations. Special emphasis on governments in Florida.
PREREQUISITE: POL 201

POL343 Government in Metropolitan Areas
3 credits
Offered By Announcement Only
Political and administrative processes of governmental units within metropolitan areas; interrelations of these units and the evolution of metropolitan processes and forms.
PREREQUISITE: POL 201

POL344 Gender and Politics
3 credits
Offered By Announcement Only
Compares the roles played by men and women in political systems worldwide; examines public policy outcomes with significant gender-based effects, including policies on sexuality & reproductive health, gender-based violence, work & the family, and access to education.
PREREQUISITE: POL 202
POL345 The United States and Asia
3 credits
Offered By Announcement Only
Political, economic, and security aspects of America's relations with the Asian-Pacific area. Trade and alliance relationships. Actions and interactions of Asian states, their alignments with each other; the impact of these alignments on their relationships with the United States and in the global balance of power.
PREREQUISITE: POL 203

POL346 U.S.-Latin American Relations
3 credits
Fall Semester
Systematic survey of U.S.-Latin American relations highlighting contending paradigms in the study of hemispheric relations. Examines issues in East-West and North-South relations and political economy of Brazil, Mexico, and Argentina. Considers alternative U.S. foreign policies.
PREREQUISITE: POL 202, OR POL 203

POL347 American Foreign Policy
3 credits
Offered By Announcement Only
Examination and analysis of American diplomacy with emphasis on the post-cold war period. Introduces the constitutional framework within which foreign policy is formulated and the evolution of policies in response to changes in the external environment.
PREREQUISITE: POL 201 AND 203

POL348 United States Relations with the Middle East
3 credits
Offered By Announcement Only
Evolution of American relations with the Middle East. Analysis of the motivations and calculations, including domestic and external sources of policy-making and implementation. Emphasis on post-World War II period, with particular attention to the current administration.
PREREQUISITE: POL 203

POL349 U. S. Defense Policy
3 credits
Spring Semester
Examination of key problems of national security in the post-Cold War environment. Emphasis on the structure and functioning of the US defense establishment and its interactions with its most probable adversaries and allies. Consideration of the constraints on, and options open to, policy planners, and with the institutional elements of the decision making process.
PREREQUISITE: POL 201 AND 203 OR HIS 121 OR HIS 122

POL351 Public Opinion
3 credits
Fall Semester
Political functions of public opinion; opinion dynamics in the U.S.A.; quantitative analysis of elements in opinion change; principles of political control via mass media in the U.S.A.
PREREQUISITE: POL 201
POL352 Political Parties
3 credits
Offered By Announcement Only
Analysis of political organizations and electoral processes in the United States: their history, current status, and present trends. Consideration of the organization, control, and finances of political parties and pressure groups, their characteristic practices, and their relationship to political democracy.
PREREQUISITE: POL 201

POL353 Interest Groups and Lobbying
3 credits
Offered By Announcement Only
Analysis of lobbying and political interest groups in the United States; history, current status, and present trends. The organizations, control, and finances of pressure groups, their characteristic practices, and their relationship to democracy. Also, lobbying by citizens and groups more broadly, including the role of campaign contributions.
PREREQUISITE: POL 201

POL354 The CIA and the World of Intelligence
3 credits
Fall Semester
What the CIA does, how it does it, and the ways in which the CIA works with other intelligence agencies. Topics explored include: notable intelligence successes and failures, key intelligence issues, and ethical debates about intelligence activities including covert action.
PREREQUISITE: POL 201 OR POL 203

POL360 Congressional Representation
3 credits
Fall Semester
Examination of how and when citizens influence legislators' behavior. How legislators' floor behavior reflects citizens' preferences and how these preferences influence the formation of electoral coalitions.
PREREQUISITE: POL 201

POL370 Global Energy Politics
3 credits
Offered By Announcement Only
PREREQUISITE: POL 201 OR 203

POL372 Introduction to Criminal Justice
3 credits
Spring Semester
Selected topics in criminal law with an emphasis on constitutional criminal procedure and post 9/11 developments in federal criminal law: constitutional principles covering investigation and arrest, racial profiling, warrantless searches, controversial interrogation techniques, rights of "enemy combatants" and the imposition of capital punishment.
PREREQUISITE: POL 201

POL373 Constitutional Law I
3 credits
Fall Semester
A study of the development of the principles of American Constitutional Law, with a course focus upon those constitutional principles developed from the original document. Areas of study include judicial review, separation of powers, the Commerce Clause, the Contract Clause, and the Due Process Clauses.
PREREQUISITE: POL 201
POL374 Constitutional Law II
3 credits Not Offered; Transfer Credit Only
This course is a continuation of Constitutional LAW I. The curriculum covers the twenty-seven Amendments to the Constitution with a primary focus upon speech, assembly, religion, right to counsel, self-incrimination and unreasonable searches.
PREREQUISITE: POL 201

POL380 Comparative Political Analysis
3 credits Spring Semester
An introduction to the techniques of comparative political analysis by applying major social scientific arguments to the question: Why do some countries develop stable democracies and others do not? Students will pursue their own research projects seeking to answer this question in the context of a country or countries of their choice.
PREREQUISITE: POL 202; POL 250 IS RECOMMENDED

POL381 West European Politics (Previous Title: European Politics and Government)
3 credits Fall Semester
Examination of post-war political and economic developments in selected European countries. Focuses on political parties, welfare states, and political institutions.
PREREQUISITE: POL 202

POL382 Government and Politics of the Federal Republic of Germany
3 credits Offered By Announcement Only
An examination of Germany's political system, its political parties, and the country's economic, social and foreign policies.
PREREQUISITE: POL 202

POL384 Post communist Russian Politics
3 credits Fall Semester
Examines the demise of the USSR and the tumultuous post communist transition in Russia from Gorbachev to Putin and Medvedev. The foundations of state power, the political party system, civil society, petro-state capitalism, endemic corruption, current politics, and Russian nationalism are examined through the lens of western and Russian political science theories.
PREREQUISITE: POL 202

POL385 Politics and Society in Latin America
3 credits Fall & Spring Semester
Introduction to the politics of Latin American countries focusing on 20th century history, the impact of the Cold War and home-grown social struggles, economic development models, the difficulties of democratic consolidation, U.S-Latin America relations, the emergence of new political factors such as women's and indigenous movements, and current political constellations. The course combines a study of thematic issues with case studies.
PREREQUISITE: POL 202
POL386 Democratic Consolidation
3 credits  Offered By Announcement Only
Explore the general concept of "democratic consolidation" which has become a timely topic in the discourse of today's foreign policy. We will examine the central theoretical concepts that frame the discourse and then examine several case studies.
PREREQUISITE: POL 202

POL387 Politics of the Middle East
3 credits  Fall Semester
Comparative analysis of the political development of the Middle East in terms of nations and as a region. Particular stress is on the relationships within the region and with other regions of the world.
PREREQUISITE: POL 202

POL388 Politics of Israel
3 credits  Fall Semester
Comparative analysis of the political development of the state of Israel from the Yishuv period to the current pluralistic society. Particular stress is on the unique status of a predominantly Jewish state in the midst of an Arab/Islamic regional subsystem of political relationships.
PREREQUISITE: POL 202

POL391 Topics in International Relations (Previously: Introduction to International Relations)
3 credits  Fall & Spring Semester & First & Second Summer Session
Introduction to the theory and practice of international relations. Development of the modern state system; diplomacy and negotiation; balance of power considerations. Evaluation of past and present experiences of international cooperation through various multinational organizations; international law. Introduction to the principles of international political economy; "high" versus "low" and "hard" versus "soft" politics. "North"-"South" divisions. Class discussion of topics of current relevance to the international community.
PREREQUISITE: POL 203

POL392 International Terrorism
3 credits  Spring Semester
Study of phenomenon of low-intensity warfare known as international terrorism in all its variations: state, state-sponsored, state-supported, domestic revolutionary terrorism and counterterrorism. Also examines governmental policies of countering terrorism.
PREREQUISITE: POL 202 OR 203

POL499 Special Topics
1-3 credits  Fall & Spring Semester & First & Second Summer Session
Government Accountability and Personal Responsibility, emphasizing new ways public agencies are communicating with citizens and changes in citizen expectations for self-governance. Various provisions of the new health care reform act, such as the requirement that all citizens purchase health insurance, would be covered along with new technologies such as "311" systems and social networking designed to improve citizen-government contacts.
POL501 Budget and Financial Management and Administration
3 credits  Spring Semester
Role of the budget in shaping public policy; managing public revenues; budgetary theory, politics, and fiscal management. Examples from state, municipal and federal governments.
PREREQUISITE: ADVANCED UNDERGRADUATE OR GRADUATE STANDING AND PERMISSION OF INSTRUCTOR.

POL510 Political Analysis
3 credits  Fall Semester
Introduction to the tools used to investigate empirical questions relevant to politics, policy and public administration. Students apply statistical concepts to contemporary social phenomena. Examines the impact of minority-majority redistricting, the fairness of the butterfly ballot, and the sources of political realignment.
PREREQUISITE: POL 201 OR POL 202 OR POL 203 OR POL 380 OR GRADUATE STANDING

POL512 Advanced Political Analysis
3 credits  Offered By Announcement Only
This course teaches students how to do social science research using the applied techniques of statistics and case study analysis while exposing them to research in the leading sub-fields of political science. Students will produce an original paper that evaluates an academic question using empirical social science evidence.
PREREQUISITE: POL 380 OR POL 510

POL513 Models of Politics
3 credits  Offered By Announcement Only
Hands-on examination of the process by which quantitative and qualitative models are constructed in political science. The course focuses on the creative aspect of model building and diverse forms of theory construction.
PREREQUISITE: POL 201, POL 202, OR POL 203

POL515 Media Content Analysis
3 credits  Fall Semester
There are few facets of our lives which are not directly affected by media content. From cell phones to televisions, the media is with us all the time. But what messages are contained in the mass media? What methods can we employ to study media content scientifically? This course will explore methods of analyzing media sources including movies, newspapers, magazines, and television. Course topics will include political bias, campaign coverage, and news content. Students will design their own projects and implement their own coding strategies.
PREREQUISITE: FOR POLITICAL SCIENCE MAJORS: POL 201. FOR NON-POLITICAL SCIENCE MAJORS, JUNIOR SENIOR, OR GRADUATE STUDENT STANDING.

POL520 Internship
3 credits  Fall & Spring Semester & First & Second Summer Session
Provides advanced political science majors with an opportunity to participate in a structured, supervised internship. 25-35 page research paper required.
PREREQUISITE: JUNIOR OR SENIOR STANDING; OPEN TO POLITICAL SCIENCE MAJORS ONLY, WITH MINIMUM GPA OF 3.5 IN THE MAJOR, 3.3 OVERALL; PERMISSION OF SUPERVISING INSTRUCTOR AND DEPARTMENT CHAIR.
POL 521 Public Affairs Internship
3 credits Fall & Spring Semester & First & Second Summer Session
Opportunity for the advanced student specializing in public administration to participate in an administrative capacity in an agency of state or local government. Periodic conferences with adviser and paper required.
PREREQUISITE: JUNIOR OR SENIOR STANDING; OPENING TO POLITICAL SCIENCE MAJORS ONLY. NEED MINIMUM GPA OF 3.5 IN THE MAJOR, 3.3 GPA OVERALL. PERMISSION OF SUPERVISING INSTRUCTOR AND DEPARTMENT CHAIR.

POL 522 Introduction to Graduate Public Administration
3 credits Fall & Spring Semester
Introduction to concepts, issues, problems, theories and process in the field of public administration and/or public management.
PREREQUISITE: ADVANCED UNDERGRADUATE OR GRADUATE STANDING AND PERMISSION OF INSTRUCTOR.

POL 523 Problems in Public and Non-Profit Management
3 credits Offered By Announcement Only
Nature of the power vested in administrative bodies and problems involved in management procedures. Special emphasis on local or non-profit administration.
PREREQUISITE: ADVANCED UNDERGRADUATE OR GRADUATE STANDING. PERMISSION OF INSTRUCTOR.

POL 524 Non-Profit Organizations: Law, Policy, and Management
3 credits Fall Semester
This course teaches students the essential requirements for creation and operation of tax-exempt nonprofit organization in accordance with state and federal law. The course covers a wide range of relevant topics including guidelines for charitable giving and charitable solicitation, pitfalls that can result in personal liability for officers and directors, and statutory constraints on legislative lobbying and political activities.
PREREQUISITE: JUNIOR OR SENIOR STATUS, GRADUATE STANDING, OR PERMISSION OF THE INSTRUCTOR.

POL 525 Comparative Public Policy and Administration
3 credits Offered By Announcement Only
Comparison and analysis of the organizational and managerial policy problems of developed and developing nations. The administrative process will be considered within the institutional and cultural framework of each nation. Case studies will be used to focus on transition from traditional to modern techniques of public management.
PREREQUISITE: POL 202

POL 526 Administrative Law
3 credits Fall Semester
Administrative law is the study of the legal relationship of government agencies to legislatures, courts, and private parties. The course examines the legal dimensions of bureaucratic power and procedures as well as constitutional and statutory constraints on regulators and administrators. Topics include rulemaking, adjudication, investigation and enforcement, political controls on agencies, judicial review of agency decisions, governmental liability and immunity, public records and open meetings laws. Both federal law and Florida law are covered. The course assumes a basic knowledge of the American legal system, constitutional law and bureaucracy.
PREREQUISITE: FOR POLITICAL SCIENCE MAJORS: POL 201 AND POL 321. FOR NON-POLITICAL SCIENCE MAJORS, JUNIOR, SENIOR, OR GRADUATE STANDING.
POL528 Advanced Seminar on Electoral Behavior
3 credits Offered By Announcement Only
This seminar examines the opinions that Americans have and how those opinions are expressed through participation in elections. At the end of the semester we will also examine other forms of political participation (e.g., interest groups).
PREREQUISITE: POL 201.

POL529 Voting in the US: Access, Fairness, and Reform
3 credits Fall Semester
Fair and free democratic elections are the heart of US democracy. This course will examine who gets to vote, whether election laws and rules are fair (and fairly implemented), and proposals to reform the way elections are run.
PREREQUISITE: POL 201

POL530 Intelligence and National Security Decision Making
3 credits Offered By Announcement Only
This course will study the US national security community structure and decision making process. The course will look at the National Security Council, the principal national security agencies (such as the CIA, Defense Department, and State Department), how they interact, and their roles in devising and executing policy. We will also examine the role and function of senior policy decision makers such as the President. We will study recent policy challenges such as Iraq and Afghanistan as examples of National Security policy.
PREREQUISITE: POL 201 AND POL 203

POL531 Global Environmental Politics
3 credits Offered By Announcement Only
Examination of the environment within the context of economic globalization. Contrasts the international trading regime and those regimes designed to protect the environment, with specific attention to the issues of global warming and bio-diversity.
PREREQUISITE: POL 203

POL535 Comparative Legal Systems
3 credits Fall & Spring Semester
Considers the institutional and political roles of Courts from a comparative perspective. With a focus on judicial independence and judicial review, will consider the juridical systems of a variety of countries and regions including the US, the EU, Germany, France, Great Britain, Chile, Argentina, Russia, The Asian-Pacific Rim, South Africa, Israel, Central America and the Middle East.
PREREQUISITE: POL 202 OR GRADUATE STANDING.
POL536 U.S. Health Care Crisis: Politics and Policies
3 credits
Spring Semester
This seminar will explore the politics and policies of healthcare in the United States. Our examination of the current crisis in cost and coverage will draw on experience from the debates on comprehensive and incremental reform over the past decade. In addition, we will explore the politics and policies of other health and science issues. Students will be expected to attend every class and be actively involved in class discussions. There will be two examinations, one at mid-term and a final based on readings and course discussions.
PREREQUISITE: JUNIORS AND SENIORS ONLY (JUNIORS MUST HAVE JUNIOR STANDING THE SEMESTER THEY TAKE THE CLASS.)

POL541 Philosophy of Law
3 credits
Offered By Announcement Only
Case-based study of jurisprudence designed to illuminate and explain philosophies of law. Examination of theories of free expression; bioethical matters; theories of punishment and legal responsibility; and the placement of religious discourses in liberal systems of law. Special attention to cases involving fundamental rights and liberties; the role of the individual and the state in civil society; and the capacities of individual to be legally competent in contemporary systems of law.
PREREQUISITE: POL 201, 212 OR POL 203 OR GRADUATE STANDING.

POL543 Urban Politics
3 credits
Offered By Announcement Only
Examination of sources of political power in urban areas and how they influence the policies pursued in those areas. Analysis of the role of economic power, protest actions, neighborhood groups, and voting to evaluate whether there is a bias in urban politics that systematically favors some groups over other and, if so, how likely it is that the bias can be overcome.
PREREQUISITE: POL 201 OR GRADUATE STANDING.

POL544 Chinese Foreign Policy
3 credits
Fall Semester
PREREQUISITE: POL 203

POL545 Environmental Policymaking
3 credits
Spring Semester
Examination of different ethical approaches to the environment; the federal government's management of natural resources; selected environmental policies; international environmental policy issues. Topics include federal management of national grazing lands, national forests, and minerals in the public domain. Analyzes environmental policies such as air, water, toxic wastes, energy, and environmentally-related issues in international trade and national security.
PREREQUISITE: POL 201 OR POL 203
POL547 Congressional Representation

This course examines how and when citizens influence legislators' behavior. More specifically, we examine how legislators' floor behavior reflects citizens' preferences and how these preferences influence the manner in which legislators build electoral coalitions.

PREREQUISITE: POL 201

POL548 Civic Participation and Democracy

Citizens participate in the governing process by communicating their preferences and pressuring the government to respond. In this course we examine these various mechanisms of "civic participation", and discuss the meaning and consequences of participatory democracy. The course focuses on the contemporary United States, but we will devote some time to discuss civic participation in other countries as well.

PREREQUISITE: POL 201

POL550 Advanced Seminar on American Politics

This seminar provides students with a survey of significant research on major topics in American Politics. We will read influential works of the past, as well as recent cutting-edge research. Particular attention will be paid to discussing the methods and theories used in the research we will read. The purpose of the course is to acquaint students with the literature on American Politics, while also providing an opportunity for students to develop skills in critically assessing and skillfully conducting social science research.

PREREQUISITE: POL 201

POL551 Productivity in the Public and Non-Profit Sectors

Definitions and measures of productivity. Evaluation of government programs, and methods of productivity improvement.

PREREQUISITE: POL 201

POL553 The Environmental Movement: Groups, Beliefs and Values

Exploration of the origins and political impact of environmentalism in the United States and, to a lesser extent, in the global context. Impact of democratic participation on environmental politics.

PREREQUISITE: POL 201

POL555 Total Quality Public Service Management: Achieving High Performance Government

Examination of the theory and practice of Total Quality Management (TQM) in the government and non-profit sector. Focuses on budgetary, customer service, employee and process improvements that facilitate increased public and non-profit performance. Special emphasis to TQM's contribution to improved service delivery.

PREREQUISITE: POL 201
POL556 Politics and Ethics
3 credits
Offered By Announcement Only
Personal, professional, organizational, and societal levels of ethical analysis. Ethical theories will be reviewed and applied to actual cases that focus on public policy and/or the officials who create and implement it. Profiles of moral exemplars in public life will be examined.
PREREQUISITE: POL 201 OR GRADUATE STANDING

POL557 Ethical and Managerial Issues in Government, Business and Non-Profit Organizations
3 credits
Governments at all levels in this country-national (Larry Craig, David Vitter, Mark Foley, Bill Clinton, Randy Cunningham, Tom DeLay, William Jefferson, James Traficant, Robert Torricelli, Jack Abramoff), state (former Illinois, Louisiana, New York, Ohio and Arizona governors), and local (Miami, Providence city officials; Miami-Dade, Broward, and Palm Beach counties) have encounter scandals involving ethical wrongdoing. Business (Enron, Worldcom) and nonprofit organizations (Boy Scouts, United Way) have faced similar problems. Countless less visible examples of unethical and ethical behavior occur in organizations daily. This course examines the causes and consequences of such actions and the managerial strategies and competencies needed to effectively cope with the ethical issues confronting individuals and organizations.
PREREQUISITE: POL 201 OR GRADUATE STANDING

POL558 From Electronic Government to Digital Governance
3 credits
Fall Semester
Explores the transition from electronic government to digital governance, emphasizing citizen participation and citizen-centric public administration; examines the economic and political consequences of new information technologies; studies the shift from bureaucracy-centered to customer-centric service orientation as a means to reduce costs, restore public trust, and improve service quality.
PREREQUISITE: POL 201

POL563 Senior Thesis
3 credits
Fall Semester
General reading, preparation of research design and collection of information for senior thesis.
PREREQUISITE: ADMISSION BY APPLICATION ONLY. SEE THE DIRECTOR OF UNDERGRADUATE STUDIES FOR DETAILS.

POL564 Senior Thesis II
3 credits
Spring Semester
Continuation of POL 563: writing and defense of the theses.
PREREQUISITE: ADMISSION BY APPLICATION ONLY. SEE THE DIRECTOR OF UNDERGRADUATE STUDIES FOR DETAILS.
POL570 Uniting States in International Perspective
3 credits  Fall Semester
How states form and fragment; The main actors in nation formation; the elements of continuity and change; the impact outsiders can have on the process.
PREREQUISITE: POL 211 AND POL 212

POL577 Security in South Asia: The Conflicts of Afghanistan, Pakistan and India
3 credits  Fall & Spring Semester
The security system of South Asia's northern reaches and the current conflict involving Afghanistan, Pakistan, and India: considerations of sovereignty and the role of frontiers in world politics.
PREREQUISITE: POL 203

POL578 Energy and Security in the Caspian and Black Sea Regions
3 credits  Fall & Spring Semester
The intersection of energy and security within the contested geopolitical and geocultural space of the Caspian and Black Sea basins. It is concerned with these two, interconnected, sub-regions for what they tell us about ideas and acts, identities and interests, in a notoriously fluid periods in international politics.
PREREQUISITE: POL 203

POL579 The politics of post-communist transactions
3 credits  Fall Semester
Examination of the creation, breakdown, and aftermath of communist governments in Eastern Europe and the USSR. Develops a theoretical framework for understanding cross-national patterns of post-communist development in the context of country-specific experiences.
PREREQUISITE: POL 202

POL580 Ethnicity, Nationalism and Secession
3 credits  Spring Semester
Examination of the creation, breakdown, and aftermath of communist governments in Eastern Europe and the Soviet Union. Using empirical evidence from four case studies, develops a theoretical framework for understanding cross-national patterns of post-communist development in the context of country-specific experiences.
PREREQUISITE: POL 202 OR POL 203

POL581 Comparative Political Economy of Post-Industrial Democracies
3 credits  Fall Semester
This seminar examines four key turning points in the development of capitalism: the industrial revolution, the aftermath of the depression and world wars, the oil crisis of the 1970's, and today's "globalization". We will compare the relationships between government and the economy in Western Europe, Canada, the U.S., Australia, New Zealand, and Japan in each period, and attempt to evaluate why these countries react similarly or differently to identical changes in world economy.
PREREQUISITE: POL 202
POL582 Political Economy of Development
3 credits
Offered By Announcement Only
Overview of the principal theoretical paradigms of the development process. Comparative analysis of issues such as the role of the state, strategies of industrialization, changes in social structure, basic needs and the trade-offs between growth and equity.
PREREQUISITE: POL 202 OR GRADUATE STANDING.

POL584 Contemporary Latin American Politics
3 credits
Fall & Spring Semester
This course assumes a basic knowledge of Latin American politics, and is designed to foster deeper understanding of political processes in the region and to provide an overview of key debates among political scientists specializing in Latin America. We discuss issues related to democratic consolidation, political participation, representation and governance.
PREREQUISITE: POL 202; POL 385 IS STRONGLY RECOMMENDED

POL586 Conflict in the Middle East and Africa
3 credits
Fall Semester
Introduction to major paradigms for the explanation of war and conflict in two of the most unstable regions of the world. Reading and class discussions on select cases of current and past conflicts in each region in order to discern patterns of conflict within and across regions, gain a clearer understanding of what drives violent conflict, and assess strategies of resolution.
PREREQUISITE: POL 203.

POL588 Politics in China
3 credits
Spring Semester
Development and nature of Chinese domestic politics in theory and practice; problems of political stability and conflict; the role of historical and cultural traditions, institutions, social, economic and personality factors in Chinese politics; process of change and problems of leadership succession; the significance of changes in the character and style of Chinese leadership.
PREREQUISITE: POL 202 OR HIS 121 OR HIS 122 OR GRADUATE STANDING.

POL591 International Security
3 credits
Offered By Announcement Only
Analysis and evaluation of approaches to international conflict, resolution, reduction and stabilization such as international organization, law, collective security, balance of power, functionalism, world government, morality, and conscience. Special emphasis on recent problems and efforts at institutionalizing social control.
PREREQUISITE: POL 203 OR GRADUATE STANDING.

POL592 International Political Economy
3 credits
Offered By Announcement Only
This course provides an analysis of the changing trade and financial structures of the international economy and the differing approaches that developed and developing states have taken in adapting to them. Special emphasis will be placed on the political implications of economic strategies, the challenges and opportunities posed by the increasingly free mobility of capital and goods across borders, and the ability of states to shape domestic economic outcomes.
PREREQUISITE: POL 203
POL593 International Relations of the Middle East
3 credits Offered By Announcement Only
Regional and interregional analysis of the foreign relations of Middle Eastern
nations, domestic and geopolitical factors.
PREREQUISITE: POL 203, 387 OR GRADUATE STANDING.

POL599 Special Topics
1-3 credits Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: POL 201, POL 202 OR 203
POR 101 Elementary Portuguese I
3 credits
Offered By Announcement Only
Drill in pronunciation, fundamental grammatical principles, simple reading and
translation, oral and written exercises. Normally, not open to students who have
completed two years of Portuguese. Closed to native speakers.

POR 102 Elementary Portuguese II
3 credits
Offered By Announcement Only
Continuation of POR 101. Closed to native speakers.
PREREQUISITE: POR 101. CLOSED TO NATIVE SPEAKERS.

POR 105 Accelerated Elementary Portuguese
3 credits
Fall & Spring Semester
Intensive study of material covered in 101 and 102. Specifically intended for students
who have completed three or more than years of high school Spanish or beginning
Spanish at another university. Also intended for heritage speakers of Romance
Languages other than Portuguese, or students with at least two years of college
study of Spanish, Italian, or French. Closed to native speakers.
PREREQUISITE: TWO OR MORE YEARS OF COLLEGE STUDY OF SPANISH, FRENCH, ITALIAN, OR
LATIN. ALSO OPEN TO HERITAGE SPEAKERS OF ROMANCE LANGUAGES OTHER THAN PORTUGUESE.

POR 211 Intermediate Portuguese I
3 credits
Fall & Spring Semester
Integrated grammar review. Diverse selection of readings: stories, plays, essays,
interviews. Practice in speaking and in writing. Class conducted in Portuguese.
Not open to native speakers.
PREREQUISITE: POR 102 OR 4 YEARS HIGH SCHOOL PORTUGUESE, OR PERMISSION OF INSTRUCTOR,
AND CLOSED TO NATIVE SPEAKERS.

POR 212 Intermediate Portuguese II
3 credits
Fall & Spring Semester
Intensive preparation for 300-level work through various genres (portraits, descriptions,
short stories, film reviews, magazines, a novel). Workshop format, the course also
develops conversational skills. Students complete a number of written projects
(including an analytic paper). Class conducted in Portuguese. Closed to native
speakers.
PREREQUISITE: POR 211 or AP-4 (IB-5), AND CLOSED TO NATIVE SPEAKERS.

POR 301 Introduction to Literary Genres
3 credits
Offered By Announcement Only
Selected materials from various genres of Luso-Afro-Brazilian literatures. Further
development of critical writing and reading skills for non-native and heritage
speakers. May be used to fulfill the humanities literature requirement. Writing
credit.
PREREQUISITE: POR 212, OR EQUIVALENT, OR HERITAGE SPEAKERS NOT FORMALLY EDUCATED
IN PORTUGUESE.

POR 310 Brazilian Women Writers in Translation
3 credits
Offered By Announcement Only
Selected contemporary Brazilian women writers. Conducted in English. Emphasis on
representations of nationality, race, class, ethnicity, gender, and
sexuality. May be used to fulfill the humanities literature requirement;
writing credit.
PREREQUISITE: ENG 106, OR EQUIVALENT; ONE 200-LEVEL COURSE IN HUMANITIES OR SOCIAL
SCIENCES; OR PERMISSION OF INSTRUCTOR.
PORTUGUESE

POR321 Studies in Luso-Brazilian Literary Themes
3 credits
Offered By Announcement Only
The study of literature through thematic readings. Writing credit. May be repeated for credit if topics vary.
PREREQUISITE: POR 212

POR322 Topics in Luso-Brazilian Cultures
3 credits
Offered By Announcement Only
Cultural issues in the Portuguese-speaking world. Topics include media, religion, language in society, popular and mass culture, the arts, immigration, social movements, race, ethnicity, and gender. Writing credit. May be repeated for credit if topics vary.
PREREQUISITE: POR 212

POR353 Brazilian Poetry
3 credits
Offered By Announcement Only
Brazilian poetry from colonial times to the present. Emphasis on major figures. Taught in Portuguese. Humanities literature credit; writing credit.
PREREQUISITE: POR 212 OR EQUIVALENT.

POR354 The Modern Brazilian Novel
3 credits
Offered By Announcement Only
The Brazilian novel since 1865. Emphasis on major works. Conducted in Portuguese. POR minors must complete all written assignments in Portuguese. Others may opt to write in English, Portuguese, or Spanish. Fulfills humanities literature requirement; writing credit.
PREREQUISITE: POR 212 OR EQUIVALENT.

POR363 Contemporary Lusophone Film
3 credits
Offered By Announcement Only
Portuguese, Brazilian, and Lusophone African cinema from the 1950s to the present. POR minors must complete all written assignments in Portuguese; Others may opt to write in English, Portuguese, or Spanish. Conducted in Portuguese. Fulfills Humanities literature requirement; writing credit.
PREREQUISITE: POR 212 OR EQUIVALENT.

POR364 The Brazilian Short Story
3 credits
Offered By Announcement Only
The Brazilian short story since 1890. Conducted in Portuguese. POR minors must complete all written assignments in Portuguese. Others may opt to write in English, Portuguese, or Spanish. Fulfills Humanities literature requirement; writing credit.
PREREQUISITE: POR 212 OR EQUIVALENT.

POR391 Directed Readings
1-3 credits
Offered By Announcement Only
Individual work on a topic not covered in the regular curriculum. May be repeated on a different topic.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

POR392 Directed Readings
1-3 credits
Offered By Announcement Only
Individual work on a topic not covered in the regular curriculum. May be repeated on a different topic.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
PORTUGUESE

POR393 Directed Readings
1- 3 credits
Offered By Announcement Only
Individual work on a topic not covered in the regular curriculum. May be repeated on a different topic.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

POR591 Directed Readings in Portuguese
1- 3 credits
Offered By Announcement Only
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

POR592 Directed Readings in Portuguese
1- 3 credits
Offered By Announcement Only
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

POR593 Directed Readings in Portuguese
1- 3 credits
Offered By Announcement Only
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

PSYCHOLOGY

PSY10T HUMAN RELATIONS
0 credit
Fall Semester
PREREQUISITE: MDCC TRANSFER COURSE.

PSY11T DYNAMICS OF BEHAVIOR
0 credit
Fall Semester
PREREQUISITE: MDCC TRANSFER COURSE.

PSY110 Introduction to Psychology
3 credits
Fall & Spring Semester & First & Second Summer Session
A survey of modern scientific psychology. Topics include learning, memory, perception, cognition, personality, motivation, emotion, development, abnormal psychology, and social psychology. Participation in a small number of experiments is required to ensure that students become acquainted first hand with the experimental laboratory methods used in Psychology. Students may choose to satisfy this requirement by writing a small number of methodology papers instead.

PSY120 Orientation to the Study of Psychology II: Forum
1 credit
Spring Semester
Critical discussion of research reports in psychology.
PREREQUISITE: PSY 110. ONLY FOR PSYCHOLOGY AND NEUROSCIENCE MAJORS WITH FEWER THAN NINE PSYCHOLOGY CREDITS-COUNTS AS ELECTIVE CREDIT.

PSY201 Social Psychology: Psychological Perspective
3 credits
Fall & Spring Semester
The major theories, methods and research findings in social psychology. Attitude formation and change, person perception, interpersonal attraction, aggression, group structure, leadership, conformity and mass phenomena. Emphasizes the individual as the basic unit of analysis (compare SOC 302).
PREREQUISITE: PSY 110.

PSY202 Introduction to Psychobiology
3 credits
Fall & Spring Semester
Behavior viewed from a biological perspective. Survey of biological factors sub serving sensation, perception, sleep, emotions, motivation, learning, memory, and development.
PREREQUISITE: PSY 110.
PSY203 Child and Adolescent Development  
3 credits  
Fall & Spring Semester & First & Second Summer Session  
Survey of significant aspects of growth and development throughout the lifespan.  
Emphasis placed on childhood and adolescence.  
PREREQUISITE: PSY 110.

PSY204 Introductory Biobehavioral Statistics  
4 credits  
Fall & Spring Semester & First & Second Summer Session  
Application of descriptive and inferential statistics to behavioral data. Principles  
and methods of summarizing data. Correlation and regression. Basic concepts of  
probability, hypothesis testing, and decision making. Tests of significance,  
confidence intervals, and analysis of variance. Examples and problems from  
biology, education, medicine, nursing, psychology, sociology.  
PREREQUISITE: MTH 101 OR 105 OR SCORES ON THE MATHEMATICS PLACEMENT TEST SUFFICIENT  
FOR ADMISSION TO A CALCULUS COURSE.

PSY207 Introduction to Cognition  
3 credits  
Fall & Spring Semester  
Survey of theory and research on human information processing and cognitive processes.  
PREREQUISITE: PSY 110.

PSY209 Introduction to Personality  
3 credits  
Fall & Spring Semester  
A survey of the area of Personality, including the relation of Personality to General  
Psychology, history of theory and research in the field, definition, assessment,  
and research findings in major substantive areas.  
PREREQUISITE: PSY 110. NOT FOR STUDENTS WITH CREDIT IN PSY 416.

PSY215 Stress Management  
3 credits  
Fall & Spring Semester & First Summer Session  
Physiology and psychology of stress, with emphasis on mind-body (stress-health)  
connection. Integrates scientific knowledge with practice techniques such as  
muscle relaxation, cognitive restructuring, meditation, anger management, yoga,  
exercise, assertiveness training, and social support.  
PREREQUISITE: PSY 110 OR PERMISSION OF INSTRUCTOR

PSY261 Industrial and Organizational Psychology  
3 credits  
Fall & Spring Semester  
Applications of psychology in business, industry, and to organizational effectiveness  
in general. Supervisory, leadership, morale, personnel selection, training, human  
actors engineering, and consumer psychology.  
PREREQUISITE: PSY 110 FOR PSYCHOLOGY MAJORS. JUNIOR OR SENIOR STANDING FOR NON-MAJORS.

PSY281 Special Topics in Psychology  
1-3 credits  
Offered By Announcement Only  
PREREQUISITE: PSY 110.

PSY301 Psychology of Gender  
3 credits  
Fall & Spring Semester & Second Summer Session  
Psychological theories and research related to understanding issues of gender across  
the lifespan.  
PREREQUISITE: SIX CREDITS IN PSYCHOLOGY.
PSY305 Psychology of Drugs and Behavior
3 credits       Spring Semester
The psychological and physiological effects of drugs. Includes psychosocial aspects
day, drug use and the treatment and prevention of abuse. An introduction to psychopharmacology.
PREREQUISITE: PSY 202; OR BIL 150 AND 6 CREDITS IN PSYCHOLOGY.

PSY316 Experimental Psychology
0-4 credits       Fall & Spring Semester
Selected laboratory experiments and demonstrations, lectures, collateral readings
in methods and results of psychological experimentation.
PREREQUISITE: PSY 110 AND 204.

PSY332 Tests and Measurements
3 credits       Offered By Announcement Only
Theory and principles of construction, use, evaluation, and interpretation of psychological
tests and testing procedures.
PREREQUISITE: PSY 110 AND 204.

PSY333 Attitudes and Persuasion
3 credits       Offered By Announcement Only
An analysis of the major theories and research findings relating to attitude formation
and change, including a review of widely used persuasion techniques.
PREREQUISITE: SIX CREDITS IN PSYCHOLOGY.

PSY340 The Psychology of Thinking and Learning in Children
3 credits       Fall & Spring Semester
Development of perception, thought, and language processes throughout the lifespan
with an emphasis on early and middle childhood.
PREREQUISITE: PSY 203.

PSY341 Psychology of Social and Emotional Development
3 credits       Fall & Spring Semester
Social and emotional growth; topics include family and peer relationships, sex
roles, self-control, and moral development.
PREREQUISITE: PSY 203.

PSY342 Psychology of Adulthood and Aging
3 credits       Spring Semester
Major developments during the middle and later years of adulthood including changes
in family and peer relationships, cognitive changes, physical changes, psychological
aspects of death and dying.
PREREQUISITE: PSY 203.

PSY343 Psychology of Language Development
3 credits       Offered By Announcement Only
Developmental sequences in the acquisition of language; the scientific endeavor
to understand language learning.
PREREQUISITE: PSY 203.

PSY344 Psychology of Infancy
3 credits       Offered By Announcement Only
Perceptual, motor, cognitive and social development during the first two years
of life. Specialized research methods and assessment procedures.
PREREQUISITE: PSY 203.
PSY350 Psychology of Human Sexual Behavior
3 credits Offered By Announcement Only
Interaction of biological and social factors in normal sexual development, and behavior patterns; etiologies of dysfunctions, paraphilias and gender-identity disorders; assessment and intervention procedures.
PREREQUISITE: SIX CREDITS IN PSYCHOLOGY.

PSY352 Abnormal Psychology
3 credits Fall & Spring Semester
Diagnostic formulations of the clinical syndromes; theories of psychopathological states.
PREREQUISITE: SIX CREDITS IN PSYCHOLOGY.

PSY365 Practicum
1-3 credits Fall & Spring Semester
Individual or small group activities and discussions regarding general principles of psychology; learn by doing; field experiences, library research, or teaching assistance. PSY 365 does not count for major or minor.
PREREQUISITE: SIX CREDITS IN PSYCHOLOGY, JUNIOR STANDING, AND PERMISSION OF CHAIRMAN.

PSY367 Introduction to Research Projects
1-3 credits Fall & Spring Semester & First & Second Summer Session
Students assist on a research project in psychology under supervision of a faculty member. Activities include library research, data collection and management, and attendance at research team meetings.
PREREQUISITE: SIX CREDITS IN PSYCHOLOGY PREFERABLY INCLUDING 204. STUDENTS MUST OBTAIN FACULTY SPONSORSHIP, IN WRITING, PRIOR TO REGISTRATION.

PSY368 Introduction to Research Projects
1-3 credits Fall & Spring Semester & First & Second Summer Session
Students assist on a research project in psychology under supervision of a faculty member. Activities include library research, data collection and management, and attendance at research team meetings.
PREREQUISITE: SIX CREDITS IN PSYCHOLOGY PREFERABLY INCLUDING 204. STUDENTS MUST OBTAIN FACULTY SPONSORSHIP, IN WRITING, PRIOR TO REGISTRATION.

PSY402 Psychobiology
3 credits Fall & Spring Semester
Basic neuroanatomy, neurophysiology, and neurochemistry followed by an introduction to the physiological bases of sensation, motor systems, motivation, emotion, learning and memory.
PREREQUISITE: NINE CREDITS IN PSYCHOLOGY INCLUDING PSY 202; OR NINE CREDITS IN PSYCHOLOGY AND BIL 150.

PSY403 Neuroscience Laboratory
4 credits Fall & Spring Semester
Research methods and laboratory experiments in contemporary Neuroscience, from individual cells to behavior. Scientific report writing and computer applications in experimental design and analysis. Lecture/Lab.
PREREQUISITE: PSY 316. PREREQUISITE OR COREQUISITE: PSY 402 OR BIL 268.

PSY414 Motivation
3 credits Offered By Announcement Only
Experimental evidence relating to theories of motivation.
PREREQUISITE: NINE CREDITS IN PSYCHOLOGY.
PSY416 Personality Theory
3 credits  Fall & Spring Semester
The role of structure, development, dynamics, individual differences, assessments, and deviations.
PREREQUISITE: NINE CREDITS IN PSYCHOLOGY.

PSY417 Emotion
3 credits  Fall & Spring Semester
Theory and research concerning the development, arousal, and expression of emotional reaction.
PREREQUISITE: NINE CREDITS IN PSYCHOLOGY.

PSY418 Experimental Personality and Social Psychology
0-4 credits  Fall & Spring Semester
Readings, laboratory experiments, and demonstrations relevant to behavioral and biomedical sciences. Experimental design, methodology, implementation, analysis, and interpretation of research with scientific report writing and computer applications.
PREREQUISITE: PSY 316 AND EITHER 201, 203, OR 209.

PSY420 Health and Medical Psychology
3 credits  Offered By Announcement Only
The psychosomatic and biopsychosocial models of illness.
PREREQUISITE: NINE CREDITS IN PSYCHOLOGY INCLUDING 202, OR PERMISSION OF INSTRUCTOR.

PSY440 Abnormal Child Psychology
3 credits  Fall & Spring Semester & First & Second Summer Session
Factors that interfere with normal development, including mental retardation, learning disabilities, emotional disturbances, and delinquency.
PREREQUISITE: JUNIOR STANDING AND NINE CREDITS IN PSYCHOLOGY INCLUDING PSY 203.

PSY441 Psychology of the Intellectual and Developmental Disabilities
3 credits  Offered By Announcement Only
The etiological, social, and psychological aspects of intellectual and developmental disabilities.
PREREQUISITE: NINE CREDITS IN PSYCHOLOGY INCLUDING PSY 203.

PSY444 Intermediate Psychological Statistics
3 credits  Spring Semester
Statistical reasoning and methods.
PREREQUISITE: NINE CREDITS IN PSYCHOLOGY INCLUDING PSY 204.

PSY450 Psychology of Religion
3 credits  Offered By Announcement Only
Contemporary psychological theory and research on religious belief, experience, and behavior. Topics include the biological bases of religion, religious development, and the links of religion to health and well-being.
PREREQUISITE: PSY 110, REL 101, AND THREE ADDITIONAL CREDITS IN PSYCHOLOGY OR RELIGIOUS STUDIES.

PSY475 Social Interaction Processes
3 credits  Offered By Announcement Only
An in-depth analysis of variables leading to, and processes involved in, human social interactions ranging from superficial encounters to intimate relationships.
PREREQUISITE: NINE CREDITS IN PSYCHOLOGY, INCLUDING PSY 201.
PSY481 Special Topics in Psychology
   1- 3 credits                                           Offered By Announcement Only
   PREREQUISITE: NINE CREDITS IN PSYCHOLOGY.

PSY498 Senior Honors in Psychology I
   3 credits                                                    Fall & Spring Semester
   Independent research project.
   PREREQUISITE: 18 CREDITS IN PSYCHOLOGY AND ELIGIBILITY FOR HONORS IN PSYCHOLOGY.

PSY499 Senior Honors in Psychology II
   3 credits                                                    Fall & Spring Semester
   Independent research project.
   PREREQUISITE: 18 CREDITS IN PSYCHOLOGY AND ELIGIBILITY FOR HONORS IN PSYCHOLOGY.

PSY501 History and Systems of Psychology
   3 credits                                           Offered By Announcement Only
   Development of psychology as a science.
   PREREQUISITE: 12 CREDITS IN PSYCHOLOGY.

PSY502 Culture, Values, Religiosity, and Mental Illness
   3 credits                                           Offered By Announcement Only
   Cultural differences in the manifestation, course, and outcome of serious mental
   disorders; the relationship between chronic mental disorders and ethnicity, religious
   values, family cohesion, attributions of control, and world view; cultural differences
   in societies' reactions to and treatment of mentally ill patients.
   PREREQUISITE: PSY 110; 316; 352.

PSY590 Special Topics
   1- 3 credits                                           Offered By Announcement Only
   PREREQUISITE: SENIOR UNDERGRADUATE OR GRADUATE STUDENT STATUS OR PERMISSION OF
   DIRECTOR OF UNDERGRADUATE STUDIES.

RELIGIOUS STUDIES
REL101 Introduction to Religion
   3 credits                                                    Fall & Spring Semester & First & Second Summer Session
   An overview of religious perspectives concerning ultimate reality, humankind, and
   the world, with special attention to major Asian and Abrahamic religions.

REL102 Problem of God
   3 credits                                                    Fall Semester

REL111 Introduction to the Hebrew Bible (Old Testament)
   3 credits                                                    Fall & Spring Semester & First & Second Summer Session
   The history and literature of ancient Israel and early Judaism.

REL121 Introduction to the New Testament
   3 credits                                                    Fall & Spring Semester
   The history and literature of the early Christian movement.

REL131 Religion in American Life
   3 credits                                                    Fall & Spring Semester & First & Second Summer Session
   The history of religion in the U.S. from the pre-colonial period to the present.
   Includes study of the religion of Native Americans, African Americans, Asian Americans,
   women, Protestants, Catholics, Jews, and cults.
REL151 Religion and Moral Choices  
3 credits  
Fall & Spring Semester  
Religious responses to dilemmas raised by issues such as capital punishment, biotechnology, abortion, euthanasia, and war.

REL171 Introduction to Islam  
3 credits  
Offered By Announcement Only  
History of Islam, the Qur'an, and the systematization of Islamic law. Emergence of the theological schools, the mystical and philosophical traditions, and the spread of Islamic civilization.

REL231 Jewish Civilization: Society, Culture and Religion  
3 credits  
Fall & Spring Semester  
Introduction to Jewish Civilization from Abraham to present.

REL232 History of Christianity  
3 credits  
Fall & Spring Semester & First & Second Summer Session  
A survey of the historical development of Christianity from the first century to the present, focusing on the major theological and institutional issues considered in their social and cultural contexts.

REL238 Holy War and Toleration in Western Religious Traditions  
3 credits  
Spring Semester  
An exploration of concepts of Holy War and Just War and of traditions of tolerance and intolerance in Judaism, Christianity, and Islam, from ancient times to the present.

REL252 Religion and Human Sexuality  
3 credits  
Fall Semester  
The relationship between religious concepts and sexual values as the religious traditions of the United States confront contemporary sexual ethics and behavior.

REL259 Transfer Credits  
1-4 credits  
Not Offered; Transfer Credit Only  
Courses taken at other institutions with no direct equivalents (Religious Issues or Problems subject area).

REL301 Ancient Greece  
3 credits  
Fall Semester  
Greek civilization from the Late Bronze Age to the end of Greek independence at the battle of Chaeronea in 338 B.C.E.  
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR.

REL302 The Hellenistic Age  
3 credits  
Spring Semester  
Conquests of Alexander the Great and the spread of Greek culture in the Near East under Alexander's successors until the death of Cleopatra in 31 B.C.E.  
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR.

REL303 The Roman Republic  
3 credits  
Fall Semester  
Roman civilization from the establishment of the Republic until the Battle of Actium in 31 B.C.E.  
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR.
REL304 The Roman Empire
3 credits Spring Semester
Roman civilization from the reign of Augustus in 27 B.C.E. to the Fall of Rome in 476 C.E.
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR.

REL305 The Ancient Near East: Religion and Culture
3 credits Spring Semester
Historical and cultural forces in the major religions of the ancient Near East, from 3000 to 300 B.C.E. Cultural achievements such as the Epic of Gilgamesh, the pyramids and the Bible.
PREREQUISITE: THREE CREDITS IN RELIGIOUS STUDIES OR JUNIOR STANDING.

REL306 Religion and Culture in Ancient Egypt
3 credits Offered By Announcement Only
A survey of religion and culture in Ancient Egypt from pre-dynastic times to the Roman era.
PREREQUISITE: THREE CREDITS IN RELIGIOUS STUDIES OR PERMISSION OF INSTRUCTOR

REL307 Religion and Culture in Pre-Islamic Arabia
3 credits Fall & Spring Semester & First & Second Summer Session
A survey of religion and culture in Arabia from prehistory to the coming of Islam.
PREREQUISITE: THREE CREDITS IN RELIGIOUS STUDIES OR PERMISSION OF INSTRUCTOR

REL308 The Greco-Roman Context of Early Christianity
3 credits Fall Semester
The Greco-Roman world in which the first Christians lived, with particular emphasis given to the historical, moral, political, religious, rhetorical, and social contexts of early Christianity.
PREREQUISITE: 3 CREDITS IN RELIGIOUS STUDIES

REL311 Prophecy and Prophetic Literature in the Hebrew Bible
3 credits Fall & Spring Semester
Prophecy in ancient Israel and Judah and the prophetic literature of the Hebrew Bible in relation to its ancient near-eastern historical, religious, and social context.
PREREQUISITE: THREE CREDITS IN RELIGIOUS STUDIES.

REL312 The Five Books of Moses
3 credits Fall & Spring Semester
The first five books of the Hebrew Bible (Genesis, Exodus, Leviticus, Numbers, Deuteronomy) in relation to their ancient Near Eastern historical, cultural, and religious context.
PREREQUISITE: THREE CREDITS IN RELIGIOUS STUDIES.

REL314 The Rise of Judaism
3 credits Fall & Spring Semester & Second Summer Session
The history and literature of early Judaism, covering the period from the fall of Jerusalem in 587/586 BCE to the beginnings of rabbinic Judaism and the formation of the Mishnah (ca.200 CE).
PREREQUISITE: 3 CREDITS IN RELIGIOUS STUDIES
REL315 Jewish Mysticism
3 credits  Fall & Spring Semester
A survey of the major ideas and texts dealing with Jewish Mysticism (Kabbalah, Hassidism).
PREREQUISITE: REL 101 OR JUNIOR STANDING.

REL321 Jesus and the Gospels
3 credits  Fall & Spring Semester
An examination of the Jesus tradition, focusing on the formative period of the first two centuries. Special emphasis on the four New Testament Gospels, with a survey of the treatment of Jesus in other documents, both Christian and non-Christian.
PREREQUISITE: THREE CREDITS IN RELIGIOUS STUDIES.

REL322 St. Paul: His Letters and Controversies
3 credits  Fall & Spring Semester
The heritage, writings, and legacy of the apostle Paul. Careful analysis of the Pauline corpus (especially Romans), with particular attention given to the radically different interpretations of Paul in both ancient and modern thought.
PREREQUISITE: THREE CREDITS IN RELIGIOUS STUDIES.

REL324 The bible and modern film.
3 credits  Offered By Announcement Only
The diverse ways in which contemporary cinematic arts interpret and depict narratives from the Bible and the ancient Mediterranean world.
PREREQUISITE: THREE CREDITS IN RELIGIOUS STUDIES.

REL325 Jesus in Myth and History
3 credits  Fall & Spring Semester
Changing concepts of Jesus in Western culture, as they emerge in literature, art, and films.
PREREQUISITE: THREE CREDITS IN RELIGIOUS STUDIES.

REL330 Caribbean Religion
3 credits  Fall Semester
Caribbean Religion with an emphasis on African Diaspora and Creole religions. The religious traditions we will cover include: Rastafarianism, Regla de Ocha (Santeria), Voodoo, Espiritismo, Regla de Palo, and Obeah.
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR

REL331 Religions of Asia
3 credits  Offered By Announcement Only
The major religions of South and East Asia including Hinduism, Buddhism, Confucianism, Taoism, and Shinto.
PREREQUISITE: THREE CREDITS IN RELIGIOUS STUDIES OR JUNIOR STANDING OR PERMISSION OF INSTRUCTOR.

REL332 Judaism, Christianity, and Islam
3 credits  Offered By Announcement Only
Completes the study of world religions begun in REL 331, but emphasizes the religions of the West. Religions studied: Zoroastrianism, Sikhism, Judaism, Christianity, and Islam. May be taken without having had REL 331.
PREREQUISITE: THREE CREDITS IN RELIGIOUS STUDIES OR JUNIOR STANDING OR PERMISSION OF INSTRUCTOR.
REL334 The American Jewish Experience: Hollywood and Popular Culture
3 credits Spring Semester
Analysis and interpretation of the image of the Jew and the Jewish experience in American cinema, with emphasis on how the experience and attitudes of Americans in general and the American Jewish community in particular have been reflected on the screen from the pre-World War II period until the present and on the tension between maintaining an ethnic identity and assimilating.

REL336 The American Encounter with Asian Religions
3 credits Offered By Announcement Only
A study of inter-cultural interaction and inter-religious encounter focusing on the history of American responses to Asian religions from 1784 to the present.
PREREQUISITE: REL 101 OR JUNIOR STANDING.

REL338 Latin American and U.S. Latino/a Religion
3 credits Fall Semester
The roots of Latino/a religion in Indigenous, African and Spanish culture and religiosity. Issues of race, identity, politics, and culture will feature prominently throughout the course.
PREREQUISITE: THREE CREDITS IN RELIGIOUS STUDIES OR PERMISSION OF INSTRUCTOR.

REL341 Modern Religious Thought I
3 credits Offered By Announcement Only
The main currents and major figures in Western religious thought from the beginnings of the Enlightenment to the middle of the nineteenth century.
PREREQUISITE: THREE CREDITS IN RELIGIOUS STUDIES OR JUNIOR STANDING.

REL342 Modern Religious Thought II
3 credits Offered By Announcement Only
Western religious thought from the middle of the nineteenth century to the present.
PREREQUISITE: THREE CREDITS IN RELIGIOUS STUDIES OR JUNIOR STANDING.

REL343 Catholic Life and Thought
3 credits Fall & Spring Semester
PREREQUISITE: THREE CREDITS IN RELIGIOUS STUDIES OR PERMISSION OF INSTRUCTOR.

REL345 Religion and Gender
3 credits Fall & Spring Semester
The influence of Western religion on the status and role of women.
PREREQUISITE: THREE CREDITS IN RELIGIOUS STUDIES OR JUNIOR STANDING OR PERMISSION OF INSTRUCTOR.

REL348 Reformation Europe
3 credits Offered By Announcement Only
The religious, political, cultural, social, and economic forces that produced a schism in 16th-century Western Christendom. Note: May be taken for credit in only one department as REL 348 or HIS 328.
PREREQUISITE: THREE CREDITS IN RELIGIOUS STUDIES.

REL350 Current Issues in Religion
3 credits Fall & Spring Semester
Individual study and group discussion of the relevance of religion to contemporary issues such as race conflict, women's rights, intermarriage, refugees, media, prejudice, and counter culture groups.
REL351 Religious Issues in Death and Dying
3 credits     Fall Semester
Major religious perspectives on the experience of death and the nature of the dying process.
PREREQUISITE: JUNIOR STANDING.

REL352 Religion and Science
3 credits     Offered By Announcement Only
The religious and ethical issues created by modern science and technology.
PREREQUISITE: SIX CREDITS IN RELIGIOUS STUDIES, OR PERMISSION OF INSTRUCTOR.

REL353 Religion and American Politics
3 credits     Fall & Spring Semester
Religious and ethical issues at debate in the American political scene.
PREREQUISITE: THREE CREDITS IN RELIGIOUS STUDIES.

REL354 Religion and the Problem of Evil
3 credits     Offered By Announcement Only
Major religious perspectives on the origin and nature of evil and human suffering.
PREREQUISITE: JUNIOR STANDING.

REL355 Religion and Its Interpreters
3 credits     Offered By Announcement Only
Nineteenth and twentieth century Western interpretations of religion including anthropological, sociological psychological, theological, literary, and feminist approaches.
PREREQUISITE: REL 101 OR JUNIOR STANDING.

REL356 Myth and Religion
3 credits     Spring Semester
How humans use language to form and communicate conceptions of reality, focusing on the highly elusive concept "myth"; special attention to the concept's usefulness for thinking about religion.
PREREQUISITE: SIX CREDITS IN RELIGIOUS STUDIES OR PHILOSOPHY; OR APY 204; OR BY PERMISSION OF INSTRUCTOR.

REL357 Sex, Gender and Ethics
3 credits     Offered By Announcement Only
The relationship between sex, gender, and ethics in Judaism, Christianity, Islam and Hinduism. Topics covered include feminism, race and ethnicity, homosexuality, transsexuality, and masculinity.
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR.

REL360 Religion and Bioethics
3 credits     Fall & Spring Semester
The implications of religious thought for contemporary problems of biomedical ethics.
PREREQUISITE: JUNIOR STANDING.

REL361 "Religion and Youth in Contemporary America"
3 credits     Spring Semester
An interdisciplinary examination of the role of religion in the lives of teenagers and college students in contemporary America.
PREREQUISITE: 3 CREDITS IN REL OR PERMISSION OF INSTRUCTOR.
REL370 Islam in Modern Times
3 credits Offered By Announcement Only
Islam's encounter with the west, the impact of modernization on the Muslim World, and the rise of Islamic Fundamentalism. Islam in America and the Afro-American Islamic movements will also be discussed. PREREQUISITE: THREE CREDITS IN RELIGIOUS STUDIES.

REL371 ISLAM AND GENDER
3 credits Spring Semester
GENDER ISSUES SUCH AS HOMOSEXUALITY, MASCULINITY, FEMININITY, MODESTY, VIRGINITY, SEXUALITY AND ITS CONTROL, AND VEILING IN ISLAM. PREREQUISITE: ONE COURSE IN ISLAM OR PERMISSION OF THE INSTRUCTOR.

REL375 Religion and Democracy in Israel
3 credits Fall Semester
Israel's evolution as a nation and a society by focusing on the impact of religion on ethnicity, culture, and democracy. PREREQUISITE: THREE CREDITS OF REL AND/OR PERMISSION OF INSTRUCTOR.

REL376 Shi’sim: Religion, Culture, and History
3 credits Offered By Announcement Only
the religious, cultural, and historical aspects of Twelver Shi’ism. The course has a film component. PREREQUISITE: ONE COURSE IN ISLAM OR PERMISSION OF THE INSTRUCTOR.

REL377 Sufism: Islamic Mysticism
3 credits Fall & Spring Semester
The doctrines, practices, teachings, and history of Sufism, the mystical dimension of Islam. PREREQUISITE: ONE COURSE IN ISLAM OR PERMISSION OF THE INSTRUCTOR.

REL380 Archaeology of Palestine from Prehistory to Islam
3 credits Offered By Announcement Only
A survey and analysis of the major archaeological excavations and surveys of Palestine. PREREQUISITE: THREE CREDITS IN RELIGIOUS STUDIES OR PERMISSION OF INSTRUCTOR.

REL401 Supervised Reading in Religious Literature or Texts
1-3 credits Fall & Spring Semester & First & Second Summer Session
Independent study to enable students to read extensively in an area of personal interest in religious literature or texts. PREREQUISITE: PERMISSION OF INSTRUCTOR.

REL402 Supervised Reading in Religious or Historical Traditions
1-3 credits Fall & Spring Semester & First & Second Summer Session
Independent study to enable students to read extensively in an area of personal interest in religious or historical traditions. PREREQUISITE: PERMISSION OF INSTRUCTOR.

REL403 Supervised Reading in Religious Issues or Problems
1-3 credits Spring Semester
Independent study to enable students to read extensively in an area of personal interest in religious issues or problems. PREREQUISITE: PERMISSION OF INSTRUCTOR.
REL404 Special Topics in Religious Literature or Texts
3 credits
Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR.

REL405 Special Topics in Religious or Historical Traditions
3 credits
Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR.

REL406 Special Topics in Religious Issues or Problems
3 credits
Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR.

REL407 Special Projects in Religious Literature or Texts
3 credits
Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR.

REL408 Special Projects in Religious or Historical Traditions
3 credits
Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR.

REL409 Special Projects in Religious Issues or Problems
3 credits
Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR.

REL450 Psychology of Religion
3 credits
Offered By Announcement Only
Contemporary psychological theory and research on religious belief, experience, and behavior. Topics include the biological bases of religion, religious development, and the links of religion to health and well-being.
PREREQUISITE: NINE CREDITS IN RELIGIOUS STUDIES. PSY 110, REL 101 AND THREE ADDITIONAL CREDITS IN PSYCHOLOGY OR RELIGIOUS STUDIES.

REL451 Ethics and Genetics
3 credits
Offered By Announcement Only
PREREQUISITE: SIX CREDITS IN RELIGIOUS STUDIES OR PERMISSION OF INSTRUCTOR.

REL491 Sr. Honors Thesis
3 credits
Offered By Announcement Only
PREREQUISITE: SENIOR STANDING AND ENROLLMENT IN THE DEPARTMENTAL HONORS PROGRAM.

REL492 Sr. Honors Thesis II
3 credits
Fall & Spring Semester
PREREQUISITE: SENIOR STANDING AND ENROLLMENT IN THE DEPARTMENTAL HONORS PROGRAM.

REL499 Method and Theory in the Study of Religion
3 credits
Offered By Announcement Only
An examination of central issues and texts in the academic study of religion, with special focus on the rise of the discipline, its axioms, and its several schools of interpretation.
PREREQUISITE: JUNIOR STANDING
REL501 Supervised Reading in Religious Literature or Texts
1- 3 credits
Offered By Announcement Only
Independent study to enable students to read extensively in an area of personal interest in religious literature or texts.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

REL502 Supervised Reading in Religious or Historical Traditions
1- 3 credits
Offered By Announcement Only
Independent study to enable students to read extensively in an area of personal interest in religious or historical traditions.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

REL503 Supervised Reading in Religious Issues or Problems
1- 3 credits
Offered By Announcement Only
Independent study to enable students to read extensively in an area of personal interest in religious issues or problems.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

REL505 Seminar in Ancient Studies
3 credits
Offered By Announcement Only
Various topics in Greek and Roman Studies.
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR.

REL510 Seminar in Hebrew Bible and Ancient Judaism
3 credits
Offered By Announcement Only
Selected topics in Hebrew Bible and Ancient Judaism.
PREREQUISITE: JUNIOR STANDING AND SIX CREDITS IN RELIGIOUS STUDIES; PERMISSION OF THE INSTRUCTOR.

REL520 Seminar in New Testament and Early Christianity
3 credits
Offered By Announcement Only
Selected topics in New Testament and Early Christianity.
PREREQUISITE: JUNIOR STANDING AND SIX CREDITS IN RELIGIOUS STUDIES; PERMISSION OF THE INSTRUCTOR.

REL530 Seminar in Religious or Historical Traditions
1- 3 credits
Offered By Announcement Only
Selected topics in religious or historical traditions.
PREREQUISITE: JUNIOR STANDING AND SIX CREDITS IN RELIGIOUS STUDIES; PERMISSION OF INSTRUCTOR.

REL550 Seminar in Religious Ethics
3 credits
Offered By Announcement Only
Selected issues in religious ethics and their social implications.
PREREQUISITE: SIX CREDITS IN RELIGIOUS STUDIES AND JUNIOR STANDING.

REL560 Seminar in Contemporary Religious Issues
1- 3 credits
Offered By Announcement Only
Selected topics in contemporary religious issues.
PREREQUISITE: JUNIOR STANDING AND SIX CREDITS IN RELIGIOUS STUDIES; PERMISSION OF INSTRUCTOR.
**SOC101 Introduction to Sociology**  
3 credits  
Fall & Spring Semester & First & Second Summer Session  
Organization of human society, processes of change, and society's influence on individual behavior.

**SOC103 Social Problems**  
3 credits  
Offered By Announcement Only  
Causes, scope, and possible solutions of social problems in American society.

**SOC210 Introduction to Social Research**  
3 credits  
Fall & Spring Semester & First & Second Summer Session  
Purposes, methods, and techniques of social investigation.  
PREREQUISITE: SOC 101.

**SOC211 Quantitative Methods for Sociologists**  
3 credits  
Fall & Spring Semester  
Data analytic techniques to analyze sociological topics. Emphasis is on basic graphic displays, measures of center and variation, chi-square, ANOVA, correlations, and regression.  
PREREQUISITE: MAJOR IN SOCIOLOGY OR CRIMINOLOGY, MTH 101, SOC 210 OR PERMISSION OF INSTRUCTOR.

**SOC212 Quantitative Methods Lab**  
1 credit  
Fall & Spring Semester  
Statistical lab associated with SOC 211 introduces the use of computer statistical packages for analyzing quantitative data. Co requisite: SOC 211.  
PREREQUISITE: COREQUISITE: SOC 211.

**SOC270 Deviant Behavior**  
3 credits  
Offered By Announcement Only  
General deviance concepts, theories of deviance and non-criminal deviance.  
PREREQUISITE: SOC 101.

**SOC271 Criminal Justice**  
3 credits  
Offered By Announcement Only  
A survey of the criminal justice system in the United States with an emphasis on the interrelationships between law enforcement, the courts, and corrections.  
PREREQUISITE: SOC 101.

**SOC291 Special Topics**  
3 credits  
Fall & Spring Semester  
PREREQUISITE: THREE CREDITS IN SOCIOLOGY.

**SOC292 Special Topics**  
3 credits  
Offered By Announcement Only  
PREREQUISITE: THREE CREDITS IN SOCIOLOGY.

**SOC293 Special Topics**  
3 credits  
Offered By Announcement Only  
PREREQUISITE: THREE CREDITS IN SOCIOLOGY.
SOC301 Social Organization
3 credits Offered By Announcement Only
Roles, organization, personality and values as components of formal and informal groups.
PREREQUISITE: SOC 101.

SOC302 Social Psychology: Sociological Perspective
3 credits Offered By Announcement Only
The influence of human groups and social processes on individual behavior, and personality.
PREREQUISITE: SOC 101 OR PSY 110.

SOC303 Social Inequalities
3 credits Offered By Announcement Only
Social ranking by class, status, and power. Stratification by age, sex or minority group membership.
PREREQUISITE: SOC 101.

SOC304 Dynamics of Poverty in the United States
3 credits Offered By Announcement Only
Examines trends in the incidence and causes of major types of poverty among the urban underclass, the homeless, migrant laborers, the working poor. Also explores policy-related solutions.
PREREQUISITE: SOC 101.

SOC320 Social Epidemiology: Illness and Death in Society
3 credits Fall Semester
Theories, issues and methods of study pertinent to illness and death in society.
Social factors implicated in patterns of mental and physical health and mortality.
PREREQUISITE: SOC 101

SOC332 Collective Behavior
3 credits Offered By Announcement Only
Classical theories, issues, and research on fads, fashions, riots, crowd behavior, social movements and other forms of collective behavior.
PREREQUISITE: SOC 101.

SOC335 LGBTQ Communities
3 credits Fall Semester
Gender, race, age, class and cultural differences in the experiences of gay individuals and communities, using both social movements and lifespan perspectives.
PREREQUISITE: SOC 101 AND 3 ADDITIONAL CREDIT HOURS IN SOCIOLOGY

SOC340 Sociology of Religion
3 credits Offered By Announcement Only
Social foundations of religion, growth and change within religious institutions and relationships of religion to other institutions.
PREREQUISITE: SOC 101.

SOC341 Social and Cultural Change
3 credits Offered By Announcement Only
Survey of major theories of change; analysis of the processes and mechanisms of change. Contemporary transitions in the underdeveloped regions of the world.
PREREQUISITE: SOC 101.
SOC342 Contemporary Latin American Societies  
3 credits  
Social characteristics of Latin American societies and their comparison with North American society. 
PREREQUISITE: SOC 101.

SOC345 Population and Society  
3 credits  
Demographic analysis of fertility, mortality, sex-age structure, migration, urbanization and population control. 
PREREQUISITE: SOC 101.

SOC350 Sociology of the Family  
3 credits  
Examines definitions, history and larger social structures in which family relations are embedded. 
PREREQUISITE: SOC 101.

SOC351 Business and Society  
3 credits  
This course explores the influence of business objectives, values, and ethics on American culture, moral standards, and societal institutions. 
PREREQUISITE: SOC 101.

SOC352 Sport and Society  
3 credits  
Sport as an expression of, and shaper of U.S. society; cross cultural and historical comparisons; specialization, player rights, violence, and the "winning" psychology. 
PREREQUISITE: SOC 101.

SOC359 The Sociology of Human Sexuality  
3 credits  
A socio-historical survey of sexual attitudes and behavior in the western world, with emphasis on social factors; premarital sex, extra-marital sex, prostitution, homosexuality, and venereal disease. 
PREREQUISITE: SIX CREDITS IN PSYCHOLOGY AND/OR SOCIOLOGY.

SOC365 Internship  
3 credits  
Fall & Spring Semester  
Prescribed study and supervised work in various types of organizations and institutions. 
PREREQUISITE: SOC 101 & SOC 210

SOC368 Violence in America  
3 credits  
Offered By Announcement Only  
Violence in historical, international and situational contexts, including the major explanations of violence, and factors associated with violent crime. 
PREREQUISITE: SOC 101.

SOC370 Juvenile Delinquency  
3 credits  
Fall & Spring Semester  
The extent and nature of juvenile delinquency. The juvenile justice system, correctional institutions for delinquents, community treatment and prevention programs. 
PREREQUISITE: SOC 101.
SOC371 Criminology
3 credits
Fall & Spring Semester
Social, cultural and individual factors in the etiology of crime; the consequences of criminal behavior.
PREREQUISITE: SOC 101.

SOC372 Criminology: Police and Community
3 credits
Spring Semester
The police in U.S. society. Interaction with groups and institutions.
PREREQUISITE: SOC 101.

SOC373 Criminology: Courts and Society
3 credits
Offered By Announcement Only
The courts and judicial functions in U.S. society.
PREREQUISITE: SOC 101.

SOC374 Criminology: Corrections
3 credits
Offered By Announcement Only
Corrections in the U.S. society; philosophies of rehabilitation, punishment, and incapacitation.
PREREQUISITE: SOC 101.

SOC375 Sociology of Mental Health and Illness
3 credits
Offered By Announcement Only
An introduction to sociological theories and research regarding the definition, experience, and treatment of mental illness.
PREREQUISITE: SOC 101.

SOC377 Sociology of Drug Abuse
3 credits
Offered By Announcement Only
The epidemiology and etiology of drug abuse, treatment and prevention, societal reaction.
PREREQUISITE: SOC 101.

SOC378 Criminology: Law and Society
3 credits
Offered By Announcement Only
Function of law in a complex social structure.
PREREQUISITE: SOC 101.

SOC380 Sociology of Gender
3 credits
Offered By Announcement Only
Social and historical construction of gender. Discussion of gender and various social institutions and categories.
PREREQUISITE: SOC 101.

SOC381 Aging in Society
3 credits
Offered By Announcement Only
Basis for understanding the social aspects of aging, diversity in the lives of older adults (e.g., family, health, work and retirement, wealth and poverty, death and dying), and public policy that affects us all.
PREREQUISITE: SOC 101.
SOC382 The U.S. Jewish Community
3 credits
Offered By Announcement Only
An application of minority group analysis to the U.S. Jewish community.
PREREQUISITE: SOC 101.

SOC383 Sociology of Education
3 credits
Course focuses on the institution of education. Assesses its structure, processes, and interaction patterns within it. Also examines its impact on socioeconomic inequality along race, class, and gender lines.
PREREQUISITE: SOC 101.

SOC384 Medical Sociology
3 credits
Sociological aspects of health care, patient behavior, medical institutions.
PREREQUISITE: SOC 101.

SOC385 U. S. Latinos
3 credits
Sociological perspectives are employed in the examination of the historical, social, economic, and cultural experiences of Latino/as in the United States.
PREREQUISITE: SOC 101.

SOC386 U. S. Immigration
3 credits
The major sociological debates in the field of immigration with an emphasis on recent immigrants to the U.S.
PREREQUISITE: SOC 101.

SOC387 Race and Ethnic Relations
3 credits
Fall & Spring Semester
The influence of racial distinctions on individual and social behavior.
PREREQUISITE: SOC 101.

SOC388 The Black Ghetto in Urban Society
3 credits
Fall Semester
This course examines the origin and evolution of the "ghetto" as a concept and the social and historical significance of the ghetto in understanding the development of black community life in urban America.
PREREQUISITE: SOC 101.

SOC390 Directed Studies
1-3 credits
Offered By Announcement Only
Individually supervised readings or research on special topics offered by arrangement with instructor.
PREREQUISITE: SOC 101.

SOC391 Special Topics
3 credits
Fall & Spring Semester
PREREQUISITE: SOC 101

SOC401 Sociological Theory
3 credits
Fall & Spring Semester
Classical sociological concepts and theory from the eighteenth century to the present.
PREREQUISITE: NINE CREDITS IN SOCIOLOGY AND SENIOR STANDING
SOC470 Theories of Deviant Behavior
3 credits                             Fall & Spring Semester & First Summer Session
Social, cultural, and individual factors involved in the etiology of deviance and crime. Strain and control theories, learning theory, conflict and interaction theories.
PREREQUISITE: NINE CREDITS IN SOCIOLOGY INCLUDING SOC 101, 371.

SOC487 Race, Ethnicity, and Criminal Justice
3 credits                                                           Spring Semester
Discussion of race and ethnicity, crime and justice. Examination and evaluation of theory, research and the justice system.
PREREQUISITE: SIX CREDITS IN SOCIOLOGY.

SOC488 Gender and Crime
3 credits                                              Offered By Announcement Only
Examination of gender, power, and crime, including feminist theories and the criminal justice system.
PREREQUISITE: SIX CREDITS IN SOCIOLOGY.

SOC490 Directed Studies in Sociology
1- 3 credits                                                 Fall & Spring Semester
Supervised independent study on special topics. Arrangement with individual faculty.
PREREQUISITE: SOC 101, JUNIOR/SENIOR STANDING, OVERALL GPA 2.75 OR HIGHER, AND PERMISSION OF INSTRUCTOR.

SOC491 Special Topics
3 credits                                              Offered By Announcement Only
PREREQUISITE: SIX CREDITS IN SOCIOLOGY.

SOC492 Special Topics
3 credits                                              Offered By Announcement Only
PREREQUISITE: SIX CREDITS IN SOCIOLOGY.

SOC493 Special Topics
3 credits                                              Offered By Announcement Only
PREREQUISITE: SIX CREDITS IN SOCIOLOGY.

SOC498 Senior Honors Thesis in Sociology or Criminology I
3- 6 credits                             Fall & Spring Semester
Independent research project.
PREREQUISITE: 18 CREDITS IN SOCIOLOGY/CRIMINOLOGY INCLUDING SOC 210 AND 211.

SOC499 Senior Honors Thesis in Sociology or Criminology II
3- 6 credits                             Fall & Spring Semester
Independent research project.
PREREQUISITE: 18 CREDITS IN SOCIOLOGY/CRIMINOLOGY INCLUDING SOC 201 AND 211.

SPANISH
SPA  Studies in Spanish
0 credit                                                           Fall & Spring Semester
SPA101 Elementary Spanish I
3 credits
Fall & Spring Semester & First Summer Session
For students with no background or previous study of Spanish. The focus of SPA 101 is the development of communicative abilities in speaking, reading, writing, and comprehension of Spanish and an introduction to the cultural practices of the Spanish-speaking world. Themes on: university life, family, leisure activities, and professions. Includes both oral and written assignments of grammatical structures and vocabulary introduced, informal and formal writing. Conducted entirely in Spanish. Not open to students who have completed 2 or more years of high school Spanish. Closed to heritage and native speakers of Spanish.

SPA102 Elementary Spanish II
3 credits
Fall & Spring Semester & First & Second Summer Session
Continuation of SPA 101. The development of communicative abilities in speaking, reading, writing, and comprehension of Spanish and an introduction to the cultural practices of the Spanish-speaking world. Themes on: childhood and adolescence, university life, home and community, food and lifestyle, and environmental issues. Includes both oral and written assessments of grammatical structure and vocabulary introduced, informal and formal writing. Conducted entirely in Spanish.
PREREQUISITE: SPA 101 OR EQUIVALENT AT ANOTHER INSTITUTION. CLOSED TO HERITAGE AND NATIVE SPEAKERS OF SPANISH.

SPA105 Accelerated Elementary Spanish
3 credits
Fall & Spring Semester
For students with previous study of Spanish desiring to review material covered in SPA 101 and 102 in preparation for continued study of Spanish at the intermediate level. The focus of SPA 105 is the continued development of communicative abilities in speaking, reading, writing, and comprehension of Spanish and an introduction to the cultural practices of the Spanish-speaking world. Themes on: university life, family, leisure activities, and professions, childhood and adolescence, university life, home and community, food and lifestyle, and environmental issues. Includes both oral and written assessments of grammatical structures and vocabulary introduced, informal and formal writing. Conducted entirely in Spanish.
PREREQUISITE: TWO OR MORE YEARS OF HIGH SCHOOL SPANISH OR THE EQUIVALENT. CLOSED TO HERITAGE OR NATIVE SPEAKERS OF SPANISH.

SPA143 Basic Spanish for Heritage Learners
3 credits
Fall & Spring Semester
Designed for students with little or no prior instruction in Spanish who, because of family background or social experience, can understand some casual spoken Spanish and have a passive knowledge of the language, but do not speak the language themselves. Focus on developing basic speaking, reading, and writing abilities.

SPA211 Intermediate Spanish I
3 credits
Fall & Spring Semester & First & Second Summer Session
For students with previous study of Elementary-level Spanish. The focus of SPA 211 is the continued development of communicative abilities in speaking, reading, writing and comprehension of Spanish and as an introduction to the cultural practices, family values, and social and environmental issues. Includes both oral and written assessments of grammatical structures and vocabulary introduced, informal and formal writing. Conducted entirely in Spanish.
PREREQUISITE: SPA 102 OR SPA 105, THE EQUIVALENT. CLOSED TO HERITAGE OR NATIVE SPEAKERS OF SPANISH.
SPA212 Intermediate Spanish II
3 credits  Fall & Spring Semester
For students with some previous study of Spanish at the intermediate level, who are familiar with all tenses and with vocabulary related to the topics covered in SPA 101-211. SPA 212 is the first semester of a two-semester sequence ending with SPA 214. The continued development of skills in reading, writing, speaking and listening in Spanish with an additional emphasis on cultural competence in the Spanish-speaking cultures of the world. Themes on: relationships, cultural values, different historical perspectives, and current politics. These themes will be explored through articles, films, and literary texts. The course will develop writing and reading strategies, providing students with the tools to think, read, and write critically and analytically in papers of 1-3 pages. Progress will also be accessed through quizzes and exams. Course conducted entirely in Spanish.
PREREQUISITE: SPA 211 OR EQUIVALENT. CLOSED TO NATIVE SPEAKERS AND HERITAGE LEARNERS OF SPANISH.

SPA214 Advanced Spanish
3 credits  Fall & Spring Semester
Continuation of SPA 212. This class will prepare students for advanced literature, linguistics and culture courses. The class will use films, literary works, and other cultural texts. Students will write analytic essays of 3-5 pages to develop style, vocabulary, and syntax. Course conducted entirely in Spanish.
PREREQUISITE: SPA 212 CLOSED TO NATIVE SPEAKERS AND HERITAGE LEARNERS OF SPANISH

SPA243 Intermediate Spanish for Heritage Learners
3 credits  Fall & Spring Semester
Designed for students with some prior instruction in Spanish who, because of family background or social experience, can understand casual spoken Spanish and have some functional communication abilities in the language. Focus on developing basic speaking, reading, and writing abilities.
PREREQUISITE: SPA 143 OR TWO YEARS OF HIGH SCHOOL SPANISH.

SPA244 Advanced Spanish for Heritage Learners
3 credits  Fall & Spring Semester
This course is designed for those students who, because of family background or social experience and prior instruction in Spanish, posses functional communication abilities in the language. Focus is on developing formal speaking, reading and writing abilities.
PREREQUISITE: SPA 243 OR ADVANCED ABILITY IN THE LANGUAGE

SPA280 Special Topics
3 credits  First & Second Summer Session
Awarded for 200 level study abroad course led by UM faculty.

SPA301 Introduction to Literary Genres
3 credits  Fall & Spring Semester
Selected material from various genres and periods of both Spanish and Latin American Literature. Further development of critical writing skills for non-native speakers. Closed for native speakers. May be used to fulfill the humanities literature requirement.
Writing Credit. Students may not receive credit for both 301 and 343
PREREQUISITE: SPA 214 OR EQUIVALENT AND CLOSED TO NATIVE SPEAKERS.
COLLEGE OF ARTS AND SCIENCES
SPANISH

SPA302 The Culture of Spain
3 credits
Offered By Announcement Only
Historical survey of the arts, science, letters, and political and social institutions.
Writing Credit.
PREREQUISITE: SPA 214 OR 244, OR EQUIVALENT.

SPA303 The Cultures of Spanish America
3 credits
Offered By Announcement Only
Historical survey of the arts, letters, science, and political and social institutions.
Writing Credit.
PREREQUISITE: SPA 214 OR 244 OR EQUIVALENT.

SPA310 Topics in Spanish and Spanish American Studies in Translation
3 credits
Offered By Announcement Only
PREREQUISITE: ENG 106 OR EQUIVALENT

SPA321 Introduction to Literary Themes
3 credits
Fall & Spring Semester
The study of literature through thematic readings. Writing credit. May be repeated for credit if topics vary.
PREREQUISITE: SPA 343, OR 301, OR EQUIVALENT.

SPA322 Cultural Topics
0-3 credits
Offered By Announcement Only
Cultural issues in the Spanish-speaking world. Topics include film, journalism, religion, language in society, popular and mass culture, visual arts, immigration, slavery, mestizaje. Writing credit. May be repeated for credit if topics vary.
PREREQUISITE: SPA 301 OR 343; SPA 302 OR 303 RECOMMENDED. MAY BE REPEATED FOR CREDIT IF TOPICS VARY.

SPA343 Introduction to Literary Genres for Native/Heritage Speakers
3 credits
Fall & Spring Semester
Basic tools for literary analysis and critical writing skills through the analysis of selected materials from various genres and periods of Spanish and Spanish American literature. Special attention to problems of oral and written expression unique to native/heritage speakers. Writing credit. Students may not receive credit for both 301 and 343.
PREREQUISITE: SPA 244 OR EQUIVALENT; NATIVE/HERITAGE SPEAKERS ONLY.

SPA351 Literaturas indígenas de las Americas
3 credits
Offered By Announcement Only
PREREQUISITE: SPA 301 OR SPA 343 OR INSTRUCTOR PERMISSION

SPA353 Studies in Colonial Literatures and Cultures
3 credits
Offered By Announcement Only
Latin American Literatures and cultures from the colonial centuries. May be used to fulfill the humanities literature requirement. Writing Credit.
PREREQUISITE: SPA 343, OR 301

SPA354 Studies in 19th Century Latin American Literatures and Cultures
3 credits
Offered By Announcement Only
Latin American literature and cultures from Independence to the end of the nineteenth century. May be used to fulfill the humanities literature requirement. Writing Credit.
PREREQUISITE: SPA 301, OR 343.
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COLLEGE OF ARTS AND SCIENCES
SPANISH

SPA355 Studies in 20th and 21st Century Latin American Literatures and Cultures
3 credits Fall & Spring Semester
Latin American literature and cultures from the beginning of the 20th century to the present. May be used to fulfill the humanities literature requirement. Writing Credit.
PREREQUISITE: SPA 343, OR 301, OR EQUIVALENT

SPA363 Introduction to Medieval through 17th Century Spanish Literature and Cultures
3 credits Offered By Announcement Only
Spanish peninsular literature and cultures from the earliest literary forms through the seventeenth century. May be used to fulfill the humanities literature requirement. Writing Credit.
PREREQUISITE: SPA 343, OR 301.

SPA364 Studies in 18th and 19th Century Spanish literatures and cultures
3 credits Offered By Announcement Only
Spanish peninsular literatures and cultures from the eighteenth and nineteenth centuries. May be used to fulfill the humanities literature requirement. Writing credit.
PREREQUISITE: SPA 343, OR 301.

SPA365 Studies in 20th and 21st Century Spanish Literatures and Cultures
3 credits Fall & Spring Semester
Spanish peninsular literatures and cultures from the twentieth century to the present. May be used to fulfill the humanities literature requirement. Writing Credit.
PREREQUISITE: SPA 301 OR SPA 343

SPA394 Internship
1- 3 credits Offered By Announcement Only
PREREQUISITE: SPA 214 OR 244 OR PERMISSION OF DIRECTOR OF UNDERGRADUATE STUDIES IN SPANISH

SPA395 Transfer credits
1- 3 credits Not Offered; Transfer Credit Only
Awarded for course work at another institution for which UM has no direct equivalent.

SPA396 Transfer credits
1- 3 credits Not Offered; Transfer Credit Only
Awarded for course work at another institution for which UM has no direct equivalent.

SPA397 Transfer credits
1- 3 credits Not Offered; Transfer Credit Only
Awarded for course work at another institution for which UM has no direct equivalent.

SPA398 Transfer credits
1- 3 credits Not Offered; Transfer Credit Only
Awarded for course work at another institution for which UM has no direct equivalent.

SPA399 Transfer credits
1- 3 credits Not Offered; Transfer Credit Only
Awarded for course work at another institution for which UM has no direct equivalent.
SPA401 Introduction to Hispanic Linguistics
3 credits
Offered By Announcement Only
Survey of principal areas of inquiry in Hispanic linguistics, including phonetics/phonology, morphology, syntax, pragmatics, historical, social and dialectal variations. Writing credit.
PREREQUISITE: TWO COURSES AT THE 300-LEVEL

SPA402 SPANISH SECOND LANGUAGE ACQUISITION.
3 credits
Offered By Announcement Only
The linguistic contrast between Spanish and English and the pedagogical and practical implications of understanding language, especially grammar, from a foreign/second language perspective.
PREREQUISITE: TWO COURSES AT THE 300 LEVEL

SPA422 Topics in Hispanic Linguistics
3 credits
Offered By Announcement Only
Special topics in the study of Hispanic linguistics. Possibilities include phonetics/phonology, pragmatics/discourse analysis, sociolinguistics, sociocultural theory, bilingualism.
PREREQUISITE: TWO COURSES AT THE 300-LEVEL

SPA432 Business and Diplomatic Spanish
3 credits
Offered By Announcement Only
Commercial vocabulary, economic, technical, and diplomatic terminology in Spanish. Composition based on models of business correspondence directed to Spanish-speaking countries or firms.
PREREQUISITE: SPA 301, OR 343, OR EQUIVALENT.

SPA433 Spanish for Health Care Professions
3 credits
Offered By Announcement Only
Medical vocabulary, technical and practical terminology in Spanish. Composition based on models of the documents, letters, medical history cases required in health care professions.
PREREQUISITE: SPA 301, OR 343, OR EQUIVALENT.

SPA442 Stylistics and Composition
3 credits
Offered By Announcement Only
PREREQUISITE: SPA301 OR 343 OR PERMISSION OF THE INSTRUCTOR.

SPA444 Introduction to Translation
3 credits
Offered By Announcement Only
Problems in translation: Spanish to English; English to Spanish. Writing Credit.
PREREQUISITE: TWO COURSES ON THE 300-LEVEL OR PERMISSION OF THE INSTRUCTOR, NATIVE OR NEAR NATIVE BI-LINGUAL ABILITY.

SPA501 CAPSTONE
3 credits
Fall & Spring Semester
Course with a broad-based topic designed to integrate all the high-level linguistic, critical and analytical skills with the body of knowledge acquired during the course of study towards the major. Topics vary. Open only to undergraduates completing their Spanish major. Writing Credit. To be taken in the last semester of the major.
PREREQUISITE: TO BE TAKEN IN THE LAST SEMESTER OF THE MAJOR.
SPANISH

SPA591 Directed Readings
1-3 credits Offered By Announcement Only
PREREQUISITE: ONE 500-LEVEL COURSE AND THE PERMISSION OF THE INSTRUCTOR.

SPA592 Directed Readings
1-3 credits Offered By Announcement Only
PREREQUISITE: ONE 500-LEVEL COURSE AND THE PERMISSION OF THE INSTRUCTOR.

SPA593 Directed Readings
1-3 credits Offered By Announcement Only
PREREQUISITE: ONE 500-LEVEL COURSE AND THE PERMISSION OF THE INSTRUCTOR.

SPA594 Senior Honors Thesis I
3 credits Fall & Spring Semester
Directed research for honors thesis.
PREREQUISITE: MUST HAVE COMPLETED AT LEAST 12 CREDITS AT THE 300-LEVEL OR ABOVE TOWARDS SPANISH MAJOR, MUST MEET ELIGIBILITY FOR HONORS IN SPANISH.

SPA595 Senior Honors Thesis II
3 credits Fall & Spring Semester
Directed writing of honors thesis.
PREREQUISITE: SPA 594.

THEATRE ARTS

THA101 Introduction to Theatre
3 credits First Summer Session
Intro survey course in theatre--what it is now, how it works, its practitioners and the relationship of theatre to the contemporary world. Attendance at Ring Theatre productions is required.

THA105 Introduction to Acting
3 credits First Summer Session
Basic tools of acting craft including analysis, physical action and reacting in the moment explored through exercises, scripted work and readings. A doing class, making attendance essential.

THA106 Introduction to Acting for Theatre Arts Majors
3 credits Fall & Spring Semester

THA111 Acting I-A
2 credits Fall Semester
Introduction to the elements of drama and theatre, and to the basic tools of acting craft.
PREREQUISITE: OPEN ONLY TO FRESHMAN BFA/BM MUSICAL THEATRE MAJORS ONLY.

THA112 Acting I-B (Script Analysis)
2 credits Spring Semester
Continued work on basic tools of craft including script analysis.
PREREQUISITE: THA 111.

THA113 Movement I-A
2 credits Fall Semester
Basic movement for the actor (self-use training): physical awareness and correct habits, mind/body connections, muscle tension release, body alignment, coordination, balance, flexibility and strength. Begin study of the Alexander Technique.
PREREQUISITE: OPEN ONLY TO FRESHMAN BFABM MUSICAL THEATRE MAJORS.
THA114 Movement I-B
2 credits  Spring Semester
Advanced movement for the actor; study physical/emotional choices for characters through physical centers, develop process for character's physical development through observations, explore spatial awareness, rhythm, kinesthetic body, and sensory awareness. Continued study of the Alexander Technique.
PREREQUISITE: THA 113.

THA116 Dance I-A
2 credits  Fall Semester
Beginning ballet and jazz for Musical Theatre with strong focus on technique and terminology.
PREREQUISITE: OPEN ONLY TO FRESHMAN BFA/BM MUSICAL THEATRE MAJORS.

THA117 Dance I-B
2 credits  Spring Semester
Continuation of THA 116.
PREREQUISITE: THA 116. COREQUISITE: BFA/BM MUSICAL THEATRE MAJORS.

THA120 Freshman Studio I
1- 2 credits  Fall Semester
First year theatre laboratory with strong focus on ensemble, rehearsal, and performance skills.
PREREQUISITE: OPEN ONLY TO FRESHMAN BFA/BM MUSICAL THEATRE MAJORS.

THA121 Freshman Studio II
1- 2 credits  Spring Semester
A continuation of THA 120.
PREREQUISITE: THA 120.

THA131 Musical Theatre Skills I
2 credits  Fall Semester

THA132 Musical Theatre Skills II
2 credits  Spring Semester
PREREQUISITE: THA 131

THA140 Introduction to Dance
1- 3 credits  Fall Semester
Beginning dance skills and stylistic elements of theatrical forms of dance (repeatable.)

THA141 Introduction to Scene Design/Stagecraft I (Lecture)
2 credits  Fall Semester
Introduction to scene design and construction. Co requisite: THA 143.
PREREQUISITE: COREQUISITE THA 143.

THA142 Introduction to Costume Design/Stagecraft II (Lecture)
2 credits  Spring Semester
Introduction to stage lighting and costume design. Co requisite: THA 144.
PREREQUISITE: COREQUISITE THA 144.
THA143 Introduction to Theatre Crafts I (Lab)  
1 credit Fall & Spring Semester  
Students will be assigned to run crew positions on the backstage crew for actual theatre productions in the Jerry Herman Ring Theatre or Hecht Studio Theatre. Working evenings and weekends will be required for this lab.

THA144 Introduction to Theatre Crafts II (Lab)  
1 credit Fall & Spring Semester  
Students will participate in the completion of the technical elements of Jerry Herman Ring Theatre productions. Students will be assigned to work in one of technical shops including costumes, sets, lights, props or publicity.

THA150 Musical Theater Vocal Techniques  
1 credit Fall Semester  
Fundamentals of Vocal Productions explored through group and private lessons.  
PREREQUISITE: BFA MUSICAL THEATRE FRESHMAN (FALL SEMESTER) ONLY

THA160 Dance Styles  
1-3 credits Fall & Spring Semester  
Presents a variety of dance forms that will vary from one semester to the next. Styles such as tap, modern, ethnic and contemporary (among others) will be offered on a rotating basis. Can be repeated for up to 6 credits.  
PREREQUISITE: N/A

THA191 Introductory Applied Music Theatre Voice I  
2 credits Fall Semester  
PREREQUISITE: THA 7 MAJORS ONLY

THA192 Introductory Applied Music Theatre Voice II  
1 credit Spring Semester  
PREREQUISITE: THA 7 MAJORS ONLY

THA194 Singing for Actors  
1-2 credits Offered By Announcement Only  
Fundamentals of singing to include breath control, tone production, articulation. An ensemble approach to exploring and gain self-confidence in the skill of singing for the American musical stage.  
PREREQUISITE: OPEN ONLY TO FRESHMEN B.F.A. ACTING MAJORS OR BY PERMISSION OF INSTRUCTOR

THA195 Singing for Actors  
1-2 credits Offered By Announcement Only  
Continuation of THA 194. Effective interpretation and performing of solo vocal music material.  
PREREQUISITE: THA 194. OPEN ONLY TO FRESHMEN BFA PERFORMANCE MAJORS.

THA196 Singing for the Stage I-A  
1-2 credits Fall Semester  
The selection of learning process and performance of Musical Theatre Songs with emphasis on lyrics.  
PREREQUISITE: OPEN ONLY TO FRESHMAN BFA/BM MUSICAL THEATRE MAJORS.

THA197 Singing for the Stage I-B  
1-2 credits Spring Semester  
Continuation of THA 196.  
PREREQUISITE: THA 196.
THA198 Voice and Speech I-A  
2 credits  
Fall Semester  
Fundamentals of relaxation and breath management, alignment, tone production, pitch and resonance. Anatomy and physiology of the vocal structures. Introduction to the International Phonetic Alphabet (IPA).  
PREREQUISITE: OPEN ONLY TO FRESHMAN BFA/BM MUSICAL THEATRE MAJORS.

THA199 Voice and Speech I-B  
2 credits  
Spring Semester  
Development of General American speech production and articulation skills through further phonetic study. Explorations in range, inflection, resonance, tempo and rhythm within the application of voice to text.  
PREREQUISITE: THA 198.

THA211 Acting II-A  
2 credits  
Fall Semester  
Intensive scene study for sophomore conservatory actors. Basic tools of craft developed through use of contemporary plays, script analysis, and rehearsal techniques.  
PREREQUISITE: THA 112.

THA212 Acting II-B  
2 credits  
Spring Semester  
A continuation of THA 211.  
PREREQUISITE: THA 211.

THA216 Dance II-A  
1 credit  
Fall Semester  
Intermediate Musical Theatre dance taught through ballet and jazz, with an emphasis on technique and style.  
PREREQUISITE: THA 117. COREQUISITE: BFA/BM MUSICAL THEATRE MAJORS.

THA217 Dance II-B  
2 credits  
Spring Semester  
A continuation of THA 216 incorporating characterization and additional style.  
PREREQUISITE: THA 216. COREQUISITE: BFA/BM MUSICAL THEATRE MAJORS.

THA240 Introduction to Dance II  
1-3 credits  
Spring Semester  
Continuation of THA 140 (repeatable.)  
PREREQUISITE: THA 140/DAN140.

THA241 Advance Theatre Crafts  
3 credits  
Fall Semester  
Basic scenic painting and costume construction techniques. Scenic painting includes fundamentals in wood, marbles, brick, stones, lights and shadows. Costume construction includes fundamentals in hand/machine sewing, dyeing, distressing and pattern reading.  
PREREQUISITE: THA 141 AND 142.

THA242 Drafting for the Theatre  
3 credits  
Spring Semester  
Drafting standards and techniques used for the theatre to produce scenic and lighting plans. Hand drafting and computer aided drafting.
THA243 Introduction to Drawing for the Theatre
3 credits  Fall Semester
Basic sketching, mechanical drawing and rendering techniques used for costume and scenic design. Basic black and white figure drawing, lights and shadows and perspective elevations.
PREREQUISITE: PREREQUISITE OR COREQUISITE THA 141

THA244 Advance Drawing for the Theatre
3 credits  Spring Semester
Advanced training in drawing and rendering used for costume and scenic design for the theatre. Color costume plates and scenic renderings.
PREREQUISITE: THA 243

THA245 Technical Planning for Theatrical Productions
3 credits  Offered By Announcement Only

THA246 Survey of Design for Theatre and Live Entertainment
3 credits  Offered By Announcement Only

THA251 Intermediate Acting I
3 credits  First Summer Session
Basic tools of the actor's craft are developed through script work, scene study, and improvisational techniques.
PREREQUISITE: THA 105 OR THA 106

THA252 Intermediate Acting II
3 credits  Spring Semester
A continuation of THA 251.
PREREQUISITE: THA 251.

THA253 Voice for the Stage
3 credits  Fall Semester
Fundamentals in voice and speech skills developed through vocal warm-ups, alignment, relaxation, breathing, tone production, resonance, sound focus, and articulation.
PREREQUISITE: THA 105 OR PERMISSION OF THE INSTRUCTOR

THA254 Movement for Actors
3 credits  Spring Semester
Physical range and control, physicalization and condition of character, and stage violence.
PREREQUISITE: THA 251.

THA281 History of Western Theatre Architecture
3 credits  Offered By Announcement Only

THA291 Beginning Applied Music Theatre Voice I
2 credits  Fall Semester
PREREQUISITE: THA 7 MAJORS ONLY

THA292 Beginning Applied Music Theatre Voice II
2 credits  Spring Semester
PREREQUISITE: THA 7 MAJORS ONLY
COLLEGE OF ARTS AND SCIENCES
THEATRE ARTS

THA294 Singing for Actors II-A
2 credits
Offered By Announcement Only
Development of musical theatre singing technique for BFA Acting majors. Skills to be developed include proper breathing, tone, articulation, lyric interpretation, and physical presentation. Course is repeatable.
PREREQUISITE: OPEN TO BFA ACTING MAJORS OR BY PERMISSION OF INSTRUCTOR.

THA295 Singing for Actors II-B
2 credits
Offered By Announcement Only
Development of musical theatre singing technique for BFA Acting majors. Skills to be developed include proper breathing, tone, articulation, lyric interpretation and physical presentation. Course is repeatable.
PREREQUISITE: OPEN TO BFA ACTING MAJORS OR BY PERMISSION OF INSTRUCTOR.

THA296 Singing for the Stage II-A
1 credit
Fall Semester
A continuation of ideas presented in THA 196 and 197.
PREREQUISITE: THA 197.

THA297 Singing for the Stage II-B
1 credit
Spring Semester
Instruction in preparing vocal material for musical scenes drawn from American musical theatre as well as other challenging musical material.
PREREQUISITE: THA 296.

THA298 Voice and Speech II-A
1 credit
Fall Semester
Improvement of individual voice and speech skills: through in-depth examination of habitual speech formation and vocal patterns. Application of the IPA within American accent study.
PREREQUISITE: THA 199.

THA299 Voice and Speech II-B
2 credits
Spring Semester
Strengthening the connection between the acting impulse and speaking voice. Extended voice production within scene work. Introduction to Shakespeare’s verse structure.
PREREQUISITE: THA 298.

THA311 Acting III-A
2 credits
Fall Semester
A scene study class focusing on plays with elevated language, with an emphasis on Shakespeare. May include Restoration and Greek drama as well.
PREREQUISITE: THA 212.

THA312 Acting III-B
2 credits
Spring Semester
A continuation of THA 311 with focus on high style and Comedy of Manners. May include Shaw, Wilde, and Coward.
PREREQUISITE: THA 311.
THA313 Movement II-A  
1 credit  
Period Movement: special movement requirements and techniques for four different periods of history - 16th, 17th, 18th and 19th centuries, including manners, etiquette, social mores, history and costume.  
PREREQUISITE: THA 114.

THA314 Movement II-B  
1 credit  
Fundamentals of mask work through the study of a "personal clown"; the character mask and/or an in-depth study of Commedia dell'Arte masks and character types.  
PREREQUISITE: THA 313.

THA315 Auditioning I  
2 credits  
PREREQUISITE: THA 311

THA316 Dance III-A  
2 credits  
Advanced Musical Theatre Dance incorporating high technical proficiency for expression, characterization and style.  
PREREQUISITE: THA 217. COREQUISITE: BMA/BM MUSICAL THEATRE MAJORS.

THA317 Dance III-B  
2 credits  
A continuation of THA 316.  
PREREQUISITE: THA 316. COREQUISITE: BFA/BM MUSICAL THEATRE MAJORS.

THA341 Sound for the Theatre  
3 credits  
A basic sound design class to develop an ear for music and sound.  
PREREQUISITE: THA 141 AND 142.

THA342 Scenic Design  
3 credits  
Techniques for analyzing, planning and designing stage scenery, executing color rendering and stage models.  
PREREQUISITE: THA 141 AND 243.

THA343 Costume Design  
3 credits  
Techniques for analyzing, planning, and designing theatrical costumes. Executing color rendering plates.  
PREREQUISITE: THA 142 AND 243.

THA344 Lighting Design  
3 credits  
Techniques for analyzing, planning and designing theatrical lighting. Executing light plots and corresponding paperwork.  
PREREQUISITE: THA 142

THA345 Scenic Materials and Structures  
3 credits  
Techniques for analyzing, planning, and designing stage costumes.  
PREREQUISITE: THA 141
THA347 Make-Up
3 credits Fall Semester & First Summer Session
A lecture-laboratory course in make-up for the stage, television and motion picture.
PREREQUISITE: THA 141 AND 142.

THA350 Musical Theatre Vocal Techniques II
1 credit Fall & Spring Semester
PREREQUISITE: BFA MUSICAL THEATRE FRESHMAN (SPRING SEMESTER), SOPHOMORES, JUNIORS, SENIORS ONLY.

THA351 Auditioning and Preparing for the Profession
3 credits Fall Semester
How to succeed in the theatre profession. Students will prepare audition pieces and learn resume preparation, headshots, interviewing, and other aspects of searching for and obtaining work. Not for BFA Students.
PREREQUISITE: THA 251; 252; NOT FOR BFA STUDENTS.

THA352 Singing for the Musical Theater
3 credits Offered By Announcement Only
The process of acting and singing a song for a musical play or review. Song selection, technical and acting mechanics, and how to deliver the song using 16 and 32 bar material.
PREREQUISITE: THA 251; PERMISSION OF THE INSTRUCTOR.

THA356 Improvisational Acting
3 credits Offered By Announcement Only
PREREQUISITE: THA 212 OR 252

THA364 The Theatre Industry
3 credits Fall & Spring Semester
Producing trends on Broadway, the Road, and Regional Theatre. The basics of producing, managing, and marketing a play from securing the performance rights to closing night.
PREREQUISITE: THA 101 OR 105 OR PERMISSION OF INSTRUCTOR.

THA365 Principles of Stage Management
3 credits Fall Semester
The art and craft of Stage Management from pre-production through post-production.
PREREQUISITE: THA 141 OR THA 142 OR PERMISSION OF INSTRUCTOR

THA366 Theatre Management Practicum I
3 credits Fall Semester
Practical experience on the annual season ticket campaign, marketing, finances, house management, and facilities management at the Jerry Herman Ring Theater. Open only to Theatre Management majors.
PREREQUISITE: THA 364 AND PERMISSION OF INSTRUCTOR

THA367 Theatre Management Practicum II
3 credits Spring Semester
Practical experience on the annual season ticket campaign, marketing, finances, house management, and facilities management at the Jerry Herman Ring Theatre. Open only to Theatre Management majors.
PREREQUISITE: THA 364 AND PERMISSION OF INSTRUCTOR
THA369 Producing Musical Theatre I
3 credits Offered By Announcement Only
Practical Study of the creative aspects of mounting a new, original musical.
PREREQUISITE: 3 CREDITS IN THA AT 200 LEVEL OR ABOVE

THA375 Introduction to Playwriting
3 credits Offered By Announcement Only
Understanding of the basic principles involved in play construction.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

THA381 Play Analysis I
3 credits Offered By Announcement Only
Play structure from the viewpoints of the actor, director, designer, and audience.
Understanding the play and making production choices.
PREREQUISITE: SIX CREDITS IN THEATRE ARTS.

THA382 Play Analysis II
3 credits Spring Semester
A continuation of THA 381. Emphasis on non-realistic theatre.
PREREQUISITE: THA 381.

THA385 History of Decor
3 credits Fall Semester
A History of interior decor and furniture. To provide a research background for theatrical design. Classical Greece through the present.
PREREQUISITE: THA 141 AND 142; OR SOPHOMORE AND ABOVE STATUS

THA386 History of Fashion
3 credits Spring Semester
A history of clothing and other visual elements that provide a research background for theatrical design, prehistoric through present.
PREREQUISITE: THA 141 AND 142, OR SOPHOMORE AND ABOVE STATUS

THA391 Intermediate Applied Music Theatre Voice I
2 credits Fall Semester
PREREQUISITE: THA 7 MAJORS ONLY

THA392 Intermediate Applied Music Theatre Voice II
2 credits Spring Semester
PREREQUISITE: THA 7 MAJORS ONLY

THA396 Singing for the Stage III-A
1-2 credits Fall Semester
Instruction and coaching of advanced vocal and audition material drawn from American musical theatre.
PREREQUISITE: THA 297.

THA397 Singing for the Stage III-B
1 credit Spring Semester
Vocal techniques for plays that require singing, but are non-musicals such as certain Shakespearean, Restoration, and Contemporary plays by Brecht, Weiss, or Coward.
PREREQUISITE: THA 396.
THA398 Voice and Speech III-A
1 credit  Fall Semester
Application of voice and speech in classic texts-particularly that of Shakespeare and translation plays. Accent monologues and scenes.
PREREQUISITE: THA 299.

THA399 Voice and Speech III-B
1 credit  Spring Semester
PREREQUISITE: THA 398.

THA401 Internship
1-3 credits  Fall & Spring Semester
Prescribed work and study at a theatre, opera, or dance company as it pertains to the major's concentration of study. Collateral reports, readings, conferences with faculty supervisor.
PREREQUISITE: OPEN TO B.F.A. CANDIDATES ONLY.

THA402 Internship
3 credits  Fall & Spring Semester
Continuation of THA 401.
PREREQUISITE: OPEN TO B.F.A. CANDIDATES ONLY.

THA403 Internship
3 credits  Fall & Spring Semester
Continuation of THA 402.
PREREQUISITE: OPEN TO B.F.A. CANDIDATES ONLY.

THA404 Internship
3 credits  Fall & Spring Semester
Continuation of THA 403.
PREREQUISITE: OPEN TO B.F.A. CANDIDATES ONLY.

THA410 Independent Study
1-3 credits  Offered By Announcement Only
Individualized instruction on special topics.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

THA411 Acting IV-A
2 credits  Fall Semester
Scene study focusing on early modern European playwrights that may include Ibsen, Chekhov, Strindberg, and others.
PREREQUISITE: THA 312 OR PERMISSION OF INSTRUCTOR.

THA412 Acting IV-B
2 credits  Spring Semester
Scene study focusing on contemporary playwrights who use elevated language. May include Pinter, Stoppard, Mamet, Anouilh, Churchill, and others.
PREREQUISITE: THA 411 OR PERMISSION OF INSTRUCTOR.
THA413 Movement III-A

2 credits
Unarmed combat for the stage: basic and advanced techniques including punches, slaps, kicks, rolls and fight choreography. As sanctioned by the Society of American Fight Directors (SAFD).
PREREQUISITE: THA 314 OR PERMISSION OF INSTRUCTOR.

THA414 Movement III-B

2 credits
Weapons for the stage: basic and advanced techniques of armed combat including rapier, rapier and dagger, broadsword and/or quarterstaff as sanctioned by the Society of American Fight Directors (SAFD).
PREREQUISITE: THA 413 OR PERMISSION OF INSTRUCTOR.

THA415 Auditioning-I

2 credits
Fall Semester
A course dedicated to the business of theatre for actors. Students will prepare three to five audition pieces. Covers headshots, resumes, income tax situations, unions, and methods of searching for and obtaining work.
PREREQUISITE: THA 312.

THA416 Auditioning-II

2 credits
Spring Semester
Continuation of THA 415.
PREREQUISITE: THA 315

THA420 Senior Studio

3 credits
Spring Semester
Rehearsal and production of a showcase culminating in a New York performance for agents and casting directors.
PREREQUISITE: THA 412 AND BFA/BM MUSICAL THEATRE MAJOR WITH SENIOR STATUS OR BY PERMISSION OF INSTRUCTORS.

THA431 Musical Theatre Styles I

2-3 credits
Fall Semester
Focus on the preparation of a professional musical theatre audition book. Emphasis on all current musical theatre song styles. 16 and 32 bar audition cuts, full songs and appropriate monologues.
PREREQUISITE: SENIOR BFA/BM MUSICAL THEATRE MAJORS WITH SENIOR STATUS OR PERMISSION OF INSTRUCTOR.

THA432 Musical Theatre Styles II

2-3 credits
Spring Semester
Musical scene study class exploring scenes from various styles and genres of musical theatre. Scenes will consist of spoken dialogue and singing. Continuation of THA 431.
PREREQUISITE: THA 431.

THA441 Design Studio I

3 credits
Fall Semester
Hands on practicum training working as a designer or technical craftsperson for a main stage or studio production; or as an assistant designer or assistant technical craftsperson for a main stage production. Repeatable once for credit toward major.
PREREQUISITE: THA 342 OR 343 OR 344.
THA442 Design Studio II  
3 credits  
Spring Semester  
Hands on practicum training working as a designer or technical craftsperson for a main stage or studio production; or as an assistant designer or assistant technical craftsperson for a main stage production. Repeatable once for credit toward major.  
PREREQUISITE: THA 342 OR 343 OR 344.

THA451 Advanced Acting: Classical Poetic Text  
3 credits  
Fall Semester  
An introduction to styles focusing on the Greeks, Shakespeare, Restoration and other plays on poetic language.  
PREREQUISITE: THA 252 OR PERMISSION OF INSTRUCTOR.

THA452 Advanced Acting: Contemporary Poetic Text  
3 credits  
Spring Semester  
Acting and scene study focusing on contemporary playwrights who use poetic language, such as Mamet, Stoppard, Pinter, Shepard, Vogel, and Churchill.  
PREREQUISITE: THA 252 OR PERMISSION OF INSTRUCTOR.

THA455 Acting for the Camera  
3 credits  
Offered By Announcement Only  
Practical and audition aspects of acting in the genres of film and dramatic episodic television (situation comedy, Drama, soap opera, and commercial).  
PREREQUISITE: THA 212 OR 252.

THA459 Stage Management Practicum  
3 credits  
Fall & Spring Semester  
Practical experience as a stage manager for a production. Weekly individual meetings with instructor for analysis of performance and evaluation.  
PREREQUISITE: THA 365.

THA461 Play Direction I  
3 credits  
Fall Semester  
The art and craft of stage direction.  
PREREQUISITE: THA 141, 142, 105, 152, 312 AND 381.

THA462 Play Direction II  
3 credits  
Spring Semester  
A continuation of THA 461 in which the student directs a one act play. Enrollment limited.  
PREREQUISITE: THA 461. ENROLLMENT LIMITED.

THA463 Advanced Stage Management I  
3 credits  
Offered By Announcement Only  
Detailed work of the theatrical stage manager: people management skills, leadership, communication and organization techniques. Students will serve as a stage manager for a studio show, ASM or Stage Manager of a main stage production.  
PREREQUISITE: THA 365 AND PERMISSION OF INSTRUCTOR.

THA464 Advanced Stage Management II  
3 credits  
Offered By Announcement Only  
In-depth look at AEA rules as stated in the LORT rulebook. Refinements of organizational and communications styles, professional observations and interviews. Students will serve as an ASM or Stage Manager of a main stage production.  
PREREQUISITE: THA 365 AND PERMISSION OF INSTRUCTOR.
THA465 Theatre Management I
3 credits
Offered By Announcement Only
History of producing on Broadway along with the evolution of contemporary producers and producing organizations. Copyright Law, securing property rights, budgeting and financing the production, business structure and current developments and trends in both Broadway and commercial Broadway tours.
PREREQUISITE: THA 364 OR PERMISSION OF INSTRUCTOR.

THA466 Theatrical Unions
3 credits
Offered By Announcement Only
History of theatrical unions in America. Major unions and their contracts: actors, directors and choreographers, playwrights, composers and lyricists, designers and non-union personnel management and organizational structure.
PREREQUISITE: THA 364

THA467 Producing for Regional Theatre
3 credits
Offered By Announcement Only
History of American Regional Theatre. Forming the non-profit corporation; the mission statement; the Board of Directors; legal and tax requirements; budgeting and record keeping; staffing and organizational management.
PREREQUISITE: THA 364

THA468 Theatrical Fundraising and Marketing
3 credits
Offered By Announcement Only
Marketing and fundraising for the non-profit, professional theatre. Detailed instruction in single ticket and subscription sales; other sources of earned revenue; marketing and public relations; research for fundraising and grant writing.
PREREQUISITE: THA 364

THA469 Producing Musical Theatre II
3 credits
Offered By Announcement Only
Designed to develop, refine, rehearse, mount, and present a new musical.
PREREQUISITE: THA 369

THA471 Directing the Actor for Film
3 credits
Offered By Announcement Only
The craft of directing actors for work before a camera.
PREREQUISITE: CMP 222 OR THA 105 OR 151 OR PERMISSION OF INSTRUCTOR.

THA481 Theatre History I
3 credits
Fall Semester & First Summer Session
Theatre history from the Greeks through European Renaissance.

THA482 Theatre History II
3 credits
Fall & Spring Semester
Theatre history from the 17th century to the present.
PREREQUISITE: NONE

THA485 Playwriting II
3 credits
Spring Semester
Further examination of dramatic writing techniques including Hero's Journey model, adaptation and experimental structures.
PREREQUISITE: THA 375 OR PERMISSION OF INSTRUCTOR
THA487 Advanced Projects
3 credits
Fall & Spring Semester
Advanced practical projects in directing, dramatic writing or dramaturgy. Repeatable up to four times for credit towards major.
PREREQUISITE: 200 LEVEL THA COURSE OR PERMISSION OF INSTRUCTOR

THA491 Advanced Applied Music Theatre Voice I
2 credits
Fall Semester
PREREQUISITE: THA 7 MAJORS ONLY

THA492 Advanced Applied Music Theatre Voice II
2 credits
Spring Semester
PREREQUISITE: THA 7 MAJORS ONLY

THA561 Advanced Directing I
3 credits
Fall & Spring Semester
Continuation of THA 462. Developing a philosophy of theatrical production. Case studies in practical directing problems. The student directs a short play.
PREREQUISITE: THA 462 OR PERMISSION OF INSTRUCTOR.

URBAN STUDIES
URB201 Metropolitan Miami
3 credits
Fall Semester
This course provides interdisciplinary perspectives on the urbanization of South Florida and on Miami's urban milieu. The course uses the case of Metropolitan Miami to introduce and illustrate a range of basic concepts in urban studies.

URB301 Cities in Time and Space
3 credits
Spring Semester
This course provides interdisciplinary perspectives on the city, urbanity, and urbanization through a series of wide-ranging historical-geographical contexts.

WOMEN'S & GENDER STUDIES
WGS201 Introduction to Women's and Gender Studies
3 credits
Fall & Spring Semester
Conceptions of masculinity and femininity; gender relations; gender inequalities; the intersections of gender with other categories of identity such as class, race, sexuality, and stages in the life cycle; and the broad impact of gender on society.

WGS202 Introduction to LGBTQ Studies
3 credits
Spring Semester

WGS210 Popular representations of Queer sexualities
3 credits
Fall Semester
Critical analysis of queer subjects in popular culture.
PREREQUISITE: NONE

WGS220 European Sexualities
3 credits
Fall & Spring Semester
The history of European sexuality from the Greeks to present day.
WGS301 Feminist Inquiries
3 credits  
Spring Semester
A history of feminist thought, central issues in contemporary feminist theory, the emergence of feminist methodologies across a range of disciplines, and the ways in which feminist inquiry transforms our understanding of key issues across the curriculum. Writing Credit.
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR.

WGS302 International Perspectives on Gender and Sexuality
3 credits  
Fall & Spring Semester
A comparative study of gender identities, gender relations, and sexualities in different cultures and societies.

WGS305 Queer Studies
3 credits  
Spring Semester
Gay, lesbian, bisexual, transgender, transsexual, and queer identities; alternative family structures; queer theory; and current debates over the meaning and validity of sexuality as a way of understanding human sexual desire, emotions and behavior.
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR.

WGS315 Gender, Race, and Class
3 credits  
Fall Semester
Conceptions and intersections of gender, race, and class in historical and contemporary cultures; the impact of these experiences on individuals and society as a whole.

WGS320 Comparative Perspectives on Gender and Sexuality
3 credits  
Fall & Spring Semester
A comparative study of gender identities, gender relations, and sexualities in different cultures and societies. Writing Credit.
PREREQUISITE: WGS 201 OR PERMISSION OF INSTRUCTOR.

WGS335 LGBTQ Communities
3 credits  
Offered By Announcement Only
PREREQUISITE: SOC 101 OR WGS 202 OR PERMISSION OF INSTRUCTOR.

WGS344 Gender and Politics
3 credits  
Fall Semester
Compares the roles played by men and women in political systems worldwide; examines public policy outcomes with significant gender-based effects, including policies on sexuality & reproductive health, gender-based violence, work & the family, and access to education.

WGS345 Religion and Gender
3 credits  
Offered By Announcement Only
Religious constructions of gender identity within Christianity, with some attention to Judaism and Islam. The second Genesis creation account, which focuses on the figures of Adam and Eve, will be the focal point of our studies. An emphasis will be placed on the manner in which sexism functions within historical and present-day religious thought and practice, as well as alternative understandings of male and female identity.
PREREQUISITE: THREE (3) CREDITS IN RELIGIOUS STUDIES OR PERMISSION OF INSTRUCTOR.
WGS350 Special Topics in Women's and Gender Studies
3 credits Fall & Spring Semester
Content varies by semester.
PREREQUISITE: WGS 201 OR PERMISSION OF INSTRUCTOR

WGS361 Gender and Language
3 credits Fall & Spring Semester
The ways in which language is used in the constitution of gender, from a cross-linguistic and cross-cultural perspective.
PREREQUISITE: APY 204 OR PERMISSION OF INSTRUCTOR

WGS405 Gender and Sexuality in Cultural Context
3 credits Offered By Announcement Only
How cultural values shape our understanding and experience of gender and sexuality; how those values are produced and policed; and the impact of codes of conduct for gender relations on individuals and society as a whole within a specific cultural milieu. Writing Credit.
PREREQUISITE: THREE CREDITS IN WGS, JUNIOR STANDING OR PERMISSION OF INSTRUCTOR

WGS410 Gender, Sex, and the Law
3 credits Spring Semester
The impact of legal institutions and laws in shaping and regulating gender relations and sexual practices; the evolving relationship between legal codes and social values for women and men. Writing Credit.
PREREQUISITE: THREE CREDITS IN WGS, JUNIOR STANDING OR PERMISSION OF INSTRUCTOR

WGS420 Interpreting Bodies
3 credits Spring Semester
Perceptions, representations, and regulation of the physical body as a gendered and sexual site, as a source of pleasure, as a means of social validation, and as an object of coercion. Writing Credit.
PREREQUISITE: THREE CREDITS IN WGS, JUNIOR STANDING OR PERMISSION OF INSTRUCTOR

WGS450 Special Topics in Women's and Gender Studies
3 credits Fall & Spring Semester
Content varies by semester.
PREREQUISITE: THREE CREDITS IN WGS, JUNIOR STANDING OR PERMISSION OF INSTRUCTOR

WGS499 Independent Study
1-3 credits Fall & Spring Semester & First & Second Summer Session
By arrangement with instructor; content varies.
PREREQUISITE: THREE CREDITS IN WGS, JUNIOR STANDING OR PERMISSION OF INSTRUCTOR

WGS501 Senior Research Project
3 credits Fall & Spring Semester & First & Second Summer Session
A student initiated research project with a faculty member of the student's choice and approved by the Program director. Writing Credit.
PREREQUISITE: WGS MAJOR OR MINOR, SENIOR STATUS, AND WGS 201 AND 301.
WGS505 Senior Thesis

3 credits Fall & Spring Semester & First & Second Summer Session

Women's and Gender Studies majors with a cumulative GPA of at least 3.5 in WGS courses and an overall GPA of at least 3.0 may earn departmental honors by completing an honors thesis instead of the senior research project. Candidates for departmental honors are responsible for finding a faculty member who is willing to serve as thesis adviser and then must complete a thesis proposal of approximately 400 words which must be approved by the thesis adviser and then the program director. Most students will take this course twice, for a total of six credits. Writing Credit.

PREREQUISITE: WGS MAJOR OR MINOR, SENIOR STATUS, WGS 201 AND 301, AND APPROVAL OF PROGRAM DIRECTOR.
ACC211 Principles of Financial Accounting
3 credits Fall & Spring Semester & First & Second Summer Session
Course explores the role of accounting in providing financial information about an enterprise to decision-makers. Emphasis is placed on understanding financial accounting from a user perspective. Course covers the reporting of financial position including coverage of assets, liabilities, equity accounts, the results of operations, and cash flows.
PREREQUISITE: SOPHOMORE STANDING.

ACC212 Managerial Accounting
3 credits Fall & Spring Semester & First & Second Summer Session
Introduction to managerial accounting. Topics include various product costing techniques, analysis of cost behavior patterns, budgeting, and the use of accounting information to solve problems. The course is taught from a managerial perspective.
PREREQUISITE: ACC 211.

ACC301 Cost Accounting
3 credits Fall & Spring Semester & First Summer Session
Topics include basic cost concepts, product costing techniques including job-order and process costing, in-depth studies of techniques and issues surrounding cost allocation methods, basic approaches to solving complex accounting problems, standard cost systems and variance analysis, and variable costing. Additionally, activity-based costing concepts and methodology are introduced. Course is designed to provide students with the necessary skills to perform basic cost accounting.
PREREQUISITE: ACC 212.

ACC306 Accounting Systems
3 credits Fall & Spring Semester & First Summer Session
Contemporary accounting systems are computer based. Course covers the nature, design, implementation, and controls in computerized systems as well as manual systems. Micro computers are used as a learning tool.
PREREQUISITE: ACC 212.

ACC311 Intermediate Accounting I
3 credits Fall & Spring Semester & First Summer Session
The accounting principles which shape the financial reporting practices followed by entities that prepare financial statements in accordance with generally accepted accounting principles are discussed. Course also includes the determination of income components and balance sheet elements with brief coverage of the statement of cash flows.
PREREQUISITE: ACC 212.

ACC312 Intermediate Accounting II
3 credits Fall & Spring Semester & Second Summer Session
A continuation of ACC 311. Course focuses on more complex accounting applications such as leases, postretirement benefits, accounting for income taxes, and other topics. Additionally, the course includes coverage of the statement of cash flows.
PREREQUISITE: ACC 311 PLUS A GPA OF 3.0 OR HIGHER IN ACCOUNTING.
ACC315 Accounting for Health Care Organizations.
3 credits
Spring Semester
This course focuses on the financial accounting and reporting processes in healthcare, service industry, and governmental organizations. Practice problem solving techniques related to health care organizations. This will not count as an accounting course for accounting majors and will not satisfy any accounting requirements needed to sit for the CPA exam in Florida.
PREREQUISITE: ACC 212

ACC401 International Business Analysis
3 credits
Offered By Announcement Only
Inter-disciplinary course in the international aspects of accounting, finance, marketing, and management. Students work on an integrative case project analyzing the financial, managerial, and marketing issues in the acquisition of a foreign firm by an American firm and produce a marketing plan, pro-forma financial statements, and an organizational plan.
PREREQUISITE: FIN 330 OR MKT 360.

ACC402 Auditing
3 credits
Fall & Spring Semester & First Summer Session
Course provides an introduction to the field of auditing. It concentrates on conducting an audit of financial statements in accordance with generally accepted auditing standards. Course covers accounting information systems, audit planning, audit risk and materiality assessments, evaluation of internal control, audit evidence, documentation, and audit reports.
PREREQUISITE: ACC 312 AS PREREQUISITE OR CO-REQUISITE

ACC403 Fundamentals of Taxation
3 credits
Fall & Spring Semester & First Summer Session
Basic concepts of federal income taxation applicable to all taxpayers. The principles of individual income taxation, the tax consequences of property transactions, and an introduction to the impact of income taxes on corporations and partnerships are discussed. Emphasis is placed on study of the basic income tax formula including income exclusions, inclusions, statutory deductions, exemptions, and credits. The fundamentals of tax research are also introduced. For students who need to take ACC 303, this course satisfies that requirement. Prerequisite: ACC 311
PREREQUISITE: ACC 311

ACC404 Advanced Taxation
3 credits
Fall & Spring Semester & Second Summer Session
Study of Federal income tax laws and regulations as they affect corporations, partnerships, their owners, and employees. Emphasis is placed on tax planning aspects of formation, operation, reorganization, distribution, and liquidation of corporations and partnerships. Also includes an introduction to estate and gift taxation.
PREREQUISITE: ACC 403.

ACC406 Accounting Systems
3 credits
Fall & Spring Semester & First Summer Session
Contemporary accounting systems are computer based. Course covers the nature, design, implementation, and controls in computerized systems as well as manual systems. Micro computers are used as a learning tool.
PREREQUISITE: ACC 311
ACC411 Advanced Accounting
3 credits                         Fall & Spring Semester & First Summer Session
The primary focus of the course is on business combinations and preparing consolidated financial statements. Additionally, there is coverage of the accounting principles and practices applied to foreign operations and partnerships. For Accounting majors who need to take a 500-level accounting course, this course satisfies that requirement.
Prerequisite: ACC 312.
PREREQUISITE: ACC 312 AND SENIOR STATUS

ACC501 Advanced Cost Accounting
3 credits                         Offered By Announcement Only
The latest developments in cost and managerial accounting are studied. Using case studies, the course focuses on activity based product cost allocation methodology in terms of: (1) basic concepts and rationale, (2) applicability in both manufacturing and service industries, (3) strategic cost analyses, and (4) applicability in total quality management programs. Other topics include cost pools, two stage costing methodologies, and the behavioral aspects of cost systems. Finally, students implement an activity based cost system using commercially developed software.
PREREQUISITE: ACC 301 AND SENIOR STATUS

ACC505 Accounting Controls in Information Technology
3 credits                         Offered By Announcement Only
Course develops a student's understanding of the theory and practice of relational database management systems in the accounting view of enterprise-wide databases. With a focus on controls, students build accounting system elements related to main accounting transaction cycles, the revenue cycle, and the purchase cycle.
PREREQUISITE: ACC 212 AND PERMISSION OF INSTRUCTOR; SENIOR STATUS

ACC506 Internal Auditing
3 credits                         Offered By Announcement Only
Course explores the unique issues associated with the internal audit function. Additionally, the ethical code applicable to internal auditors is discussed.
PREREQUISITE: ACC 402 AND SENIOR STATUS

ACC511 Advanced Accounting
3 credits                         Fall & Spring Semester
The primary focus on the course is on business combinations and preparing consolidated financial statements. Additionally, there is coverage of the accounting principles and practices applied to foreign operations and partnerships. This meets the requirement for accounting students who are required to take Accounting 411.
PREREQUISITE: ACC 312 AND SENIOR STATUS

ACC522 Advanced Issues in Auditing
3 credits                         Fall Semester
Course covers advanced issues which arise in audit practice including audit reporting issues, fraud detection and reporting, attestation engagements, special reporting issues, compilation and review engagements, scope of services issues, and other new issues which have a significant impact on audit practice.
PREREQUISITE: ACC 402 AND ACCEPTED INTO THE ACCOUNTING ACCELERATED PROGRAM OR GRADUATE STATUS.
ACC523 International Accounting and Taxation
3 credits Offered By Announcement Only
Course covers tax accounting and business considerations in the global business environment. U.S. issues involved in international transactions, working across national borders, the Foreign Corrupt Practices Act, money laundering, and uses of accounting information in managing an international business.
PREREQUISITE: ACC 212 AND SENIOR STATUS.

ACC524 Accounting for Governmental and Not-for-Profit Entities
2 credits Fall Semester
The course introduces accounting within the environment of modern government and not-for-profit organizations. Emphasis is placed on financial accounting and reporting, current accounting issues, and managerial activities.
PREREQUISITE: ACC 312 AND ACCEPTED INTO THE ACCOUNTING ACCELERATED PROGRAM OR GRADUATE STATUS.

ACC525 Trends in Present Day Accounting
3 credits Offered By Announcement Only
Recent developments in accounting thought and advanced accounting theory. The analysis of trends as disclosed by recent releases of the Securities and Exchange Commission, the American Institute of Certified Public Accountants, and the Financial Accounting Standards Board are discussed. Other topics include terminology, current trends in the measurement, presentation of financial data to meet the needs of third parties, and surveys accounting literature.
PREREQUISITE: ACC 312 AND SENIOR STATUS.

ACC530 International Financial Reporting Standards
1 credit Fall Semester
This course provides an overview of International Financial Reporting Standards (IFRS). The course will begin with a study of IFRS Framework and will then examine a number of the major topics covered in the Intermediate Accounting courses. The perspective will be a comparison between IFRS and U.S. generally accepted accounting principles (U.S. GAAP).
PREREQUISITE: ACC 312 AND ACCEPTED INTO THE ACCOUNTING ACCELERATED PROGRAM OR GRADUATE STATUS.

ACC550 Accounting Internship
0-3 credits Fall & Spring Semester & First & Second Summer Session
Student is individually assigned to operating business firm or other organization to gain insight into management practice in area of career interest. Periodic reports and conferences are required. Approval of chairman is required at time of registration.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

ACC555 Accounting Honors Research Project
0-3 credits Offered By Announcement Only
Research project to fulfill requirements for Departmental Honors Accounting.
PREREQUISITE: 3.9 GPA. SENIOR STANDING. PERMISSION OF INSTRUCTOR AND DEPARTMENT.

ACC599 Directed Readings
1-3 credits Fall & Spring Semester & First & Second Summer Session
Individually supervised research projects in selected fields. Approval of supervising professor as to topic and evaluation of project is required at time of registration.
PREREQUISITE: SENIOR STANDING AND PERMISSION OF DEPARTMENT CHAIR.
BSL212 Introduction to Business Law  
3 credits  
Fall & Spring Semester & First Summer Session  
Introduction to law and legal procedure. Topics include contracts (nature and requisites, formation, operations, interpretation, discharge, and remedies) sales (Uniform Commercial Code, transfer of title, warranties, rights, and remedies of buyer and seller), and business ethics.

BSL304 Corporate Law  
3 credits  
Fall & Spring Semester & First Summer Session  
PREREQUISITE: BSL 212 OR EQUIVALENT

BSL305 Legal and Social Aspects of Business Regulation  
3 credits  
Offered By Announcement Only  
An introduction to the legal and ethical issues arising out of business and the regulatory environment. Topics include business ethics and subjects as environmental law antitrust, securities, administrative process, consumer protection, and employment regulation.

BSL313 Coastal Law  
3 credits  
Fall Semester  
Basic doctrines and public policy related to the use and regulation of the United States coastal zone and seabed.  
PREREQUISITE: BSL 212 OR EQUIVALENT.

BSL314 Ocean Law  
3 credits  
Spring Semester  
The principles of international ocean law regarding ocean management. Topics include ocean delimitation and issues of environmental ocean regulation within international legal framework.  
PREREQUISITE: BSL 212 OR EQUIVALENT.

BSL333 Legal Aspects of Real Estate Transactions  
3 credits  
Fall & Spring Semester & First Summer Session  
Legal principles controlling the acquisition, ownership, financing, and development of real property. Topics include nature and acquisition of rights in real property, theory of estates, co-ownership, fixtures, easements, legal descriptions, evidence of title, title insurance, deeds, mortgages, closing the sales and mortgage transactions, condominiums and cooperatives, brokers, and land use.  
PREREQUISITE: BSL 212 OR EQUIVALENT.

BSL401 The Law of Financial Transactions  
3 credits  
Fall & Spring Semester & First Summer Session  
PREREQUISITE: BSL 212 OR EQUIVALENT

BSL412 International Business Law  
3 credits  
Fall & Spring Semester & First Summer Session  
International law and organizations, international sales, credits and commercial transactions, U.S. trade law, and the regulation of the international market place are discussed.  
PREREQUISITE: BSL 212 OR EQUIVALENT.
BSL424 Intellectual Property Law
3 credits
Spring Semester
This course is designed to acquaint the business student with the general framework of laws that regulate innovation, marketing, competition, and business development in the U.S. Special emphasis will be placed on discussion of ethical issues in information property, unfair competition, and management of intellectual property across various industries.
PREREQUISITE: BSL 212 OR EQUIVALENT.

BSL460 Health Care Law and Ethics
3 credits
Fall & Spring Semester
This course is designed to offer the business student an appreciation of the legal foundations and ethical considerations in health care administration in the United States.
PREREQUISITE: BSL 212 OR EQUIVALENT.

BSL485 Managing the Legal Factor
3 credits
Fall & Spring Semester
This course offers the business manager a frank and analytical view of law and legal practice as they affect business decision-making. It addresses both the issues of cost containment and relationships between counsel and the company with the objective of achieving a more effective management of the legal function in business.
PREREQUISITE: BSL 212 OR EQUIVALENT AND SENIOR STANDING.

BSL499 Special Topics
1-3 credits
Offered By Announcement Only
Independent investigation of special subjects. Approval of supervising professor as to topic and evaluation of project required at time of registration.

BSL550 Business Law Internship
2-3 credits
Offered By Announcement Only
Student is individually assigned to operating business firm or other organization to gain insight into management practice in area of career interest. Periodic reports and conferences are required. Approval of chairman required at time of registration.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

BSL555 Business Law Honors Research Project.
0-3 credits
Offered By Announcement Only
Research project to fulfill requirements for Departmental Honors in Business Law.
PREREQUISITE: 3.9 GPA. SENIOR STANDING. PERMISSION OF INSTRUCTOR AND DEPARTMENT.

BSL575 Advanced Business Law
3 credits
Spring Semester
Legal problems encountered by Certified Public Accountants, Finance, Management and Marketing Executives, including agency, commercial paper, bank deposits and collections, secured transactions, suretyship, bankruptcy, partnership, corporations, contracts, anti-trust, insurance, property, wills and estates, SEC law, and accountants' legal responsibility. Special attention is given to the commercial law segment of the Uniform Public Accountant Examination.
PREREQUISITE: BSL 212 OR EQUIVALENT AND SENIOR STANDING. NOT FOR LST MAJORS OR BSL MINORS.
BUS100 Fundamentals in Business
3 credits Fall Semester
We will expose students to the fundamental activities of the functional areas of business.
PREREQUISITE: SSP

BUS155 Exploration of Faculty Research in SBA
1 credit Offered By Announcement Only
Students will be exposed to some of the SBA's top faculty researchers to learn more about research opportunities and styles of research methodologies within business.

BUS200 The Car of the Future
3 credits Offered By Announcement Only
Powerful trends-technological, environmental, and geopolitical-will converge to transform the cars we drive on a scale not seen since Henry Ford's Model T in 1908. Dominated today by a handful of slow-moving global giants, hundreds of new entrepreneurial participants are beginning to dynamically destroy, and will subsequently reinvent, a second generation auto industry. This course will focus on the economic cross-currents that caused the collapse of General Motors and the overall disruption of the auto industry. It will explore the range of technological alternatives to the internal combustion engine vehicle with special emphasis on electrical vehicles. The innards of future electric vehicles will be discussed in detail, including battery pack design, controllers, chargers, and vehicle instrumentation. Environment incentives, including the logic of cap and trade legislation will be covered in the context of the debate on global warming. The final part of the course will extrapolate car of the future trends in terms of energy use, transportation infrastructure, urban air quality, employment and other critical issues.

BUS255 Business & Society: Inquiry + Discourse
3 credits Fall Semester

BUS300 Critical Thinking & Persuasion for Business
3 credits Fall & Spring Semester
PREREQUISITE: ACC 311

BUS498 SPECIAL TOPICS IN BUSINESS
1-3 credits Fall Semester
Topics in selected areas of Business
PREREQUISITE: PERMISSION OF INSTRUCTOR

BUS598 SPECIAL TOPICS IN BUSINESS
1-3 credits Fall Semester
Topics in selected areas of Business.
PREREQUISITE: PERMISSION OF INSTRUCTOR

COMPUTER INFORMATION SYSTEMS
CIS120 Introduction to Computer Information Systems
3 credits Offered By Announcement Only
An introduction to computers and information processing, with emphasis on application software. The course material includes: spreadsheet design and analysis, as well as the use of spreadsheet tools in facilitating decision making; relational database design and the development of database management tools; basic Internet terminology and Web design; development of team-work, presentation, and communication skills through presentation software; and the use of advanced word processing features to create a more efficient and productive working environment, as well as software application integration.
CIS150 Business Analytics  
3 credits  
Fall & Spring Semester  
The primary purpose of this course is to build skills in learning and using software technologies to support business-oriented problem solving and decision making. Specifically, you will develop the ability to solve problems, to organize and analyze data using spreadsheet and database software, and to learn to distribute information to others through the effective use of collaborative technologies and the Web. Case problems will cover areas such as accounting, finance, marketing, and statistics and operations management. Professors from several business school departments will discuss how their disciplines use spreadsheets to solve problems.

CIS151 CIS 150 Discussion Section  
0 credit  
Fall & Spring Semester  
This is a required discussion section for CIS 150.  
PREREQUISITE: CO-REQUISITE: CIS 150

CIS316 Microcomputer Business Applications  
3 credits  
Offered By Announcement Only  
A continuation of CIS 120, with emphasis on spreadsheet macros, advanced DOS, structured methodology, and command level programming. Students design and implement a relational system in Access. Course cannot be used as a technical elective in the Computer Information Systems major.  
PREREQUISITE: CIS 120.

CIS320 Introduction to Programming  
3 credits  
Fall & Spring Semester  
Course covers the fundamentals of programming logic and structured programming principles including problem solving, algorithm design, and program development using Visual Basic.

CIS322 Introduction to C++ Programming  
3 credits  
Offered By Announcement Only  
An introduction to the syntax and semantics of the C++ programming language. Topics include editing, compiling and linking C++ source code, data types, operators, precedence rules, flow of control, repetitive calculations, input/output, functions, arrays, structures, and pointers.  
PREREQUISITE: CIS 320 OR EQUIVALENT.

CIS323 Object-Oriented Programming in C++  
3 credits  
Offered By Announcement Only  
This course introduces the fundamental concepts of the C++ programming language and the techniques of object-orientation. Topics include data abstraction, encapsulation, inheritance, polymorphism, overloading, templates exception handling, data structures, namespaces, virtual functions, stream input/output, Standard Template Library, advanced pointers, and interactive code debugging.  
PREREQUISITE: CIS 320 OR EQUIVALENT

CIS324 Object-Oriented Programming in Java  
3 credits  
Spring Semester  
This course introduces the fundamental concepts of JAVA programming language and the techniques of Object-Orientation. Topics include data abstraction, encapsulation, inheritance, polymorphism, Java class library, graphics/GUI, exception handling, multithreading, multimedia, files and streams, Internet applets, application development, integrated development environment, and interactive program debugging.  
PREREQUISITE: CIS 320 OR EQUIVALENT
CIS360 Systems Analysis and Design
3 credits                                                    Fall & Spring Semester
Overview of the systems development life cycle (SDLC). Topics include concepts, tools, and techniques of systems analysis, data modeling, process modeling, CASE tools, and the role of the system analyst in the organization. Students work in groups to analyze an application system for a business related problem.
PREREQUISITE: CIS 320, OR CSC 120 OR EEN 118 OR EQUIVALENT

CIS361 Design of Information Systems
3 credits                                                             Fall Semester
Continuation of CIS 360. Topics include concepts, tools, and techniques of systems design, prototyping, file/database design, and physical process modeling. Students work in groups to design an application system for a business related problem.
PREREQUISITE: CIS 360.

CIS390 Topics in Computer Information Systems
3 credits                                                  Offered By Announcement Only
Topics in selected areas of specialization.

CIS391 Topics in Computer Information Systems
3 credits                                                  Offered By Announcement Only
Topics in selected areas of specialization.

CIS392 Topics in Computer Information Systems
3 credits                                                  Offered By Announcement Only
Topics in selected areas of specialization.

CIS393 Topics in Computer Information Systems
3 credits                                                  Offered By Announcement Only
Topics in selected areas of specialization.

CIS394 Topics in Computer Information Systems
3 credits                                                  Offered By Announcement Only
Topics in selected areas of specialization.

CIS395 Topics in Computer Information Systems
3 credits                                                  Offered By Announcement Only
Topics in selected areas of specialization.

CIS396 Topics in Computer Information Systems
3 credits                                                  Offered By Announcement Only
Topics in selected areas of specialization.

CIS397 Topics in Computer Information Systems
3 credits                                                  Offered By Announcement Only
Topics in selected areas of specialization.

CIS398 Topics in Computer Information Systems
3 credits                                                  Offered By Announcement Only
Topics in selected areas of specialization.

CIS399 Topics in Computer Information Systems
3 credits                                                  Offered By Announcement Only
Topics in selected areas of specialization.
CIS410 Information Systems and Technology
3 credits Fall & Spring Semester & First Summer Session
Course develops an understanding of the role of information technology within an organizational perspective. The course focuses upon the basic building blocks of information technology architectures and examines the issues facing a Chief Technology Officer in developing systems solutions. Topics include enterprise systems, database, decision support, intelligent systems, the Internet and e-business, as well as the ethical policy issues that affect systems architectures and their use.
PREREQUISITE: NO PREREQUISITE (ANY SCHOOL OR COLLEGE) BUT CLASS OF 2, SOPHOMORE OR BETTER.

CIS423 Database Management Systems
3 credits Fall Semester
Course covers the fundamental concepts of database management systems using the Oracle DBMS. Topics include database theory and terminology, logical modeling, normalization, SQL language, database design and implementation, database administration, data security, database transaction/concurrency, and data backup.
PREREQUISITE: CIS 360

CIS430 Business Telecommunications
3 credits Spring Semester
This course introduces the subject of voice and computer networks and their use in business applications. Topics include the local and long distance telephone networks, client-server networks, network hardware and software, distributed computing, key issues in network management, and the fundamentals of data communication.
PREREQUISITE: JUNIOR OR SENIOR STANDING.

CIS450 Introduction to Health Informatics
3 credits Spring Semester
The course develops an understanding of the role of information systems and technology within a healthcare organization. It examines the business and technical issues associated with the selection, deployment and use of health informatics, both in the clinical and back office areas. Health informatics, for the purpose of the course, is defined as the convergence of information technology, information management, and health care, at various levels, ranging from simple data gathering, to the design and implementation of new health care information systems.

CIS465 Applied Software Project Development
3 credits Spring Semester
Advanced concepts and techniques in application project development. Topics include project management, project development, testing, implementation, documentation, and maintenance. Students work on a group project to fully understand the skills required in the development of complete production quality applications.
PREREQUISITE: CIS 324, 361, 423 AND 430.

CIS490 Topics in Computer Information Systems
3 credits Offered By Announcement Only
Topics in selected areas of specialization.

CIS491 Topics in Computer Information Systems
3 credits Offered By Announcement Only
Topics in selected areas of specialization.
CIS492 Topics in Computer Information Systems
3 credits
Topics in selected areas of specialization. Offered By Announcement Only

CIS493 Topics in Computer Information Systems
3 credits
Topics in selected areas of specialization. Offered By Announcement Only

CIS494 Topics in Computer Information Systems
3 credits
Topics in selected areas of specialization. Offered By Announcement Only

CIS495 Topics in Computer Information Systems
3 credits
Topics in selected areas of specialization. Offered By Announcement Only

CIS496 Topics in Computer Information Systems
3 credits
Topics in selected areas of specialization. Offered By Announcement Only

CIS497 Topics in Computer Information Systems
3 credits
Topics in selected areas of specialization. Offered By Announcement Only

CIS498 Topics in Computer Information Systems
3 credits
Topics in selected areas of specialization. Offered By Announcement Only

CIS499 Directed Study in Computer Information Systems
1- 3 credits
Individually supervised investigation or research project in selected topics. Offered by special arrangement only. Approval of supervising professor as to topic and evaluation of project required at time of registration. PREREQUISITE: APPROVAL OF SUPERVISING PROFESSOR AND DEPARTMENT CHAIRMAN.

CIS550 Computer Information Systems Internship
1- 3 credits Fall & Spring Semester & First & Second Summer Session
Student is individually assigned to operating business firm or other organization to gain insight in information technology practice in the area of career interest. Periodic reports and conferences are required. PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN. FOR CREDIT ONLY.

CIS555 Computer Information System Honors Research Project.
0- 3 credits
Research project to fulfill requirements for Departmental Honors in Computer Information Systems. PREREQUISITE: 3.9 GPA. SENIOR STANDING. PERMISSION OF INSTRUCTOR AND DEPARTMENT.

CIS590 Topics in Computer Information Systems
1- 3 credits
Topics in selected areas of specialization. Offered By Announcement Only

CIS591 Topics in Computer Information Systems
1- 3 credits
Topics in selected areas of specialization. Offered By Announcement Only
CIS592 Topics in Computer Information Systems
1- 3 credits
Topics in selected areas of specialization.

CIS593 Topics in Computer Information Systems
1- 3 credits
Topics in selected areas of specialization.

CIS594 Topics in Computer Information Systems
1- 3 credits
Topics in selected areas of specialization.

CIS595 Topics in Computer Information Systems
1- 3 credits
Topics in selected areas of specialization.

CIS596 Topics in Computer Information Systems
1- 3 credits
Topics in selected areas of specialization.

CIS597 Topics in Computer Information Systems
1- 3 credits
Topics in selected areas of specialization.

CIS598 Topics in Computer Information Systems
1- 3 credits
Topics in selected areas of specialization.

CIS599 Topics in Computer Information Systems
1- 3 credits
Topics in selected areas of specialization.

ECONOMICS

ECO201 Essentials of Economic Theory
3 credits
A study of the economic system providing a broad based survey of basic economic principles, concepts, and tools of conventional economics. Topics include how markets function, how firms maximize profits, and the analysis of macroeconomic factors. Limited to students in Saturday BBA program.

ECO211 Economic Principles and Problems
3 credits
Fall & Spring Semester & First & Second Summer Session
Fundamental course devoted to development and application of basic analytical tools and principles required for an understanding of major economic problems and policy alternatives available for their solution. Particular emphasis on microeconomic analysis. Topics include the study of markets under varying conditions of competition, including market deficiencies such as pollution, prices, and resource allocation distribution of income, including poverty problems, the economics of the firm and the government, and international economic relations.

ECO212 Economic Principles and Problems
3 credits
Fall & Spring Semester & First & Second Summer Session
Continuation of ECO 211. Course emphasis is placed on macroeconomic analysis. Areas covered include national income and employment analysis, money and banking, economic growth, and comparison of different economic systems, including the problems of developing the less developed world.
ECO301 Macro Economic Theory
3 credits  Fall & Spring Semester & First Summer Session
Intermediate level analysis of the measurement, determination, and control of aggregate economic activity.
PREREQUISITE: ECO 211 AND 212 AND MTH 130 OR MAS 110; OR HIGHER CALCULUS OR PERMISSION OF INSTRUCTOR

ECO302 Micro Economic Theory
3 credits  Fall & Spring Semester & First & Second Summer Session
Intermediate level analysis of the role of price in resource allocation in markets of varying degrees of competition, as well as in the determination of wages, rent, interest, profits, and public policy.
PREREQUISITE: ECO 211 AND 212 AND MTH 130 OR MAS 110 OR HIGHER CALCULUS OR PERMISSION OF INSTRUCTOR.

ECO307 Public Finance and Fiscal Policy
3 credits  Offered By Announcement Only
The role of local, state, and federal government in attaining an efficient allocation of resources and an equitable distribution of income. Emphasis on criteria for the selection and evaluation of public expenditure and tax programs including the problems of coordinating federal, state, and local finance. Special attention is given to current policy issues.
PREREQUISITE: ECO 211, 212, 302.

ECO311 Labor Economics (I)
3 credits  Fall Semester
Course surveys the structure and functioning of labor markets. Topics include determinants of labor supply and labor demand, economics of wage differentials, economic impact of labor unions, discrimination in labor markets, and the labor market effects of various government policies such as payroll and income taxes, educational subsidies, and minimum wage laws. The central goal of the course is to provide the student with a framework for analyzing diverse issues related to the labor sector of the economy.
PREREQUISITE: ECO 211.

ECO345 Environmental Economics
3 credits  Fall Semester
This course determines the appropriate way to regulate economic activity so as to achieve an optimal balance between competing environmental and economic goals. Economic reasoning is used to evaluate causes and consequences of environmental problems. The course rigorously evaluates various types of environmental regulation, including "cap-and-trade," command and control mandates, and pollution taxes. Other specific topics include public goods, externalities, cost benefit analysis, non-market valuation, and international trade and development and the environment.
PREREQUISITE: ECO 211 & ECO 302

ECO350 The US in the World Economy
3 credits  Offered By Announcement Only
Course introduces International Studies students to International Economics. The gains from international trade, "competitiveness" and free trade areas are dealt with in the first part of the class. The final part of the course deals with international macroeconomics. Topics include national income accounting as well as the balance of payments and exchange rates.
PREREQUISITE: ECO 211 and 212.
ECO351 Economics of Developing Countries
3 credits
Offered By Announcement Only
Factors underlying economic development, measures of and goals for development, principles applicable to problems of development, the role of markets and planning in development, social, cultural, and political factors affecting economic development, and comparative rates of progress in different countries.
PREREQUISITE: ECO 211 AND 212.

ECO355 Urban and Regional Economics
3 credits
Offered By Announcement Only
Analysis of the location and organization of urban and regional economic activities. Topics include regional income analysis, economic stability, factor mobility, economic growth and development, land use patterns, and special urban and regional problems and policies.
PREREQUISITE: ECO 211 AND 212.

ECO371 Economic Problems of Latin America
3 credits
Spring Semester
An analysis of the historical growth of major Latin American countries, with emphasis on the post World War II period. Topics include industrialization, foreign investment, international trade and regional integration, agrarian reform, inflation, and development strategies and planning within the context of Latin America.
PREREQUISITE: ECO 211 AND 212.

ECO386 Health Economics
3 credits
Offered By Announcement Only
The course applies the tools of microeconomic analysis to the health care sector. By examining the actors and issues in this market, students are able to discuss policy issues from an economic perspective.
PREREQUISITE: ECO 211, 212, 302

ECO391 Managerial Economics
3 credits
Offered By Announcement Only
Course introduces modern techniques of economic analysis and decision science with particular application to the management of the firm in a global environment. Topics include estimation of demand (regression analysis, exponential smoothing, and moving averages), linear program solving of product mix, cost problems, game-theory in a competitive business environment, decision trees, risk and uncertainty management, and capital budgeting. Other managerial economics tools are applied to the theory of the firm.
PREREQUISITE: ECO 211/212.

ECO403 Contemporary Issues in Monetary Economics
3 credits
Fall Semester
Analysis of the role of money in economic affairs. Topics include the determinants of the money supply and interest rates, money and prices, money and stability, and growth. Emphasis is placed on current problems and policies.
PREREQUISITE: ECO 211 AND 212.
ECO420 Economic Growth  
3 credits  
Offered By Announcement Only  
Course covers selected topics in economic growth. Topics include stylized facts associated with economic growth, the theoretical study of economic growth, and empirical tests of those theories. Course work is supplemented by case studies of individual countries, particularly developing countries.  
PREREQUISITE: ECO 301.

ECO430 Applied Econometrics  
3 credits  
Fall & Spring Semester  
This course introduces basic econometric techniques for analyzing economic data. The goal is to make students sophisticated consumers and skilled producers of empirical analysis, which will be attained by extensive work on a variety of real-world data like students' test scores, CEO wages, mortgage applications, cigarette demand, stock market capitalization, inflation, GDP and interest rates. Learning how to use econometric analysis software is an integral part of the course.  
PREREQUISITE: ECO 302, MAS 110 OR MTH 130, AND MAS 202 OR MTH 224 OR EQUIVALENT.

ECO441 International Trade Theory  
3 credits  
Fall Semester  
Study of the principles of comparative advantage and the gains from international trade. Analysis of tariffs, quotas, and protectionism is included.  
PREREQUISITE: ECO 302.

ECO442 International Monetary Economics  
3 credits  
Spring Semester  
Analysis of models of the exchange rate, the balance of payments, and monetary policy in an open economy.  
PREREQUISITE: ECO 301.

ECO444 Game Theory in Economic Applications.  
3 credits  
Fall & Spring Semester  
This course is an introduction to the techniques and questions of modern microeconomics. The course will expose you to the techniques of game theory, the workhorse of modern microeconomics, and will apply those techniques to the analysis of a variety of economics situations and institutions.  
PREREQUISITE: CALCULUS I

ECO460 Industrial Organization  
3 credits  
Offered By Announcement Only  
This course shows how microeconomic theory can be used to understand the diverse practices encountered in real-world markets between the extreme cases of perfect competition and monopoly. Topics to be covered include strategic pricing behavior, collusion, advertising and information, vertical integration, vertical restraints, regulation and a review of empirical literature.  
PREREQUISITE: ECO 302.

ECO499 Special Topics  
1-3 credits  
Fall & Spring Semester & First & Second Summer Session  
Topics in area of specialization. Approval of department required at time of registration.
ECO507 Taxation and Government Expenditure
3 credits
Offered By Announcement Only
The incentive and equity effects of taxation and public expenditures. Efficiency aspects of various tax and expenditure programs and the application of cost-benefit analysis to such areas as health, education, and welfare programs, both domestic and foreign, are discussed.
PREREQUISITE: ECO 302.

ECO510 Mathematical Economics
3 credits
Fall Semester
Introduction to mathematical techniques commonly employed in economic analysis. Topics include simultaneous linear equation systems, linear algebra, and expansions of polynomials, logarithmic and exponential equations, differential calculus, and optimization theory. A substantial part of the course focuses on the comparative static analysis of both macroeconomic and microeconomic problems.
PREREQUISITE: A SEMESTER COURSE IN CALCULUS. ECO 301 AND 302.

ECO511 Labor Economics (II)
3 credits
Spring Semester
A theoretical and empirical analysis of how labor markets operate. A survey of the literature, problems, and methodology of modern labor economics. Human capital analysis, the wage structure, job search and job-matching models, time-allocation models, the economic impact of labor unions, labor market discrimination, the determinants of labor demand and supply, and the factors affecting government policy relating to the labor sector is also included.
PREREQUISITE: ECO 302.

ECO512 Mathematical Economics (II)
3 credits
Spring Semester
Economics 512 will be sequential to the introductory Mathematical Economics I (ECO 510). Topics include integral calculus, differential equations, difference equations, Kuhn-Tucker conditions, and solutions to general equilibrium systems, optimization under uncertainty, and an introduction to dynamic optimization. Applications of mathematical techniques to economic analysis will be stressed.
PREREQUISITE: ECO 510 OR ITS EQUIVALENT.

ECO520 Econometrics
3 credits
Fall Semester
Statistical methods of estimating and testing mathematical model of economic relationships.
PREREQUISITE: ECO 301 AND 302, A COURSE IN STATISTICS AND PERMISSION OF INSTRUCTOR.

ECO521 Graduate Macroeconomic Theory
3 credits
Fall Semester
The primary objective of this course is to introduce the student to the mathematical presentation of the major Classical, Neo-classical, Keynesian, and Neo-Keynesian macroeconomic models.
PREREQUISITE: INTERMEDIATE MACROECONOMIC THEORY AND PERMISSION OF INSTRUCTOR.
ECO532 History of Economic Thought  
3 credits  
Historical development of economic doctrines and theory. Topics and individuals discussed include mercantilism, physiocracy, Adam Smith, Thomas Malthus, David Ricardo, J. S. Mill, Karl Marx, marginal analysis, Alfred Marshall, and J. M. Keynes. Special emphasis is placed on the effect of historical insights upon the contemporary core of economic theory.  
PREREQUISITE: ECO 301 AND 302.

ECO533 Advanced Microeconomic Theory  
3 credits  
Fall Semester  
An introduction to the mathematical approach to microeconomic theory. Topics include consumer/household behavior, the theory of the firm, resource allocation, welfare economics, and uncertainty theory.  
PREREQUISITE: ECO 302, AND PERMISSION OF INSTRUCTOR.

ECO545 Natural Resources Economics II  
3 credits  
Offered By Announcement Only  
This course surveys the economics of natural resource use, and is targeted to upper-division undergraduate and graduate students in economics. Topics include the economics of pollution control, the application of cost/benefit analysis to the marine environment, the economics of non-renewable and renewable resource extraction, and international environmental problems.  
PREREQUISITE: ECO 345 or MAF 502.

ECO555 Economics Honors Research Project  
0-3 credits  
Offered By Announcement Only  
Research project to fulfill requirements for Departmental Honors in Economics.  
PREREQUISITE: 3.9 GPA. SENIOR STANDING. PERMISSION OF INSTRUCTOR AND DEPARTMENT.

ECO586 Economics of Health  
3 credits  
Offered By Announcement Only  
A survey of the literature on the health care market. Economic theory is used to analyze public policy alternatives.  
PREREQUISITE: ECO 302 OR 691, OR CONSENT OF INSTRUCTOR.

EXECUTIVE & SPECIAL PROGRAMS

ESP500 Review Module  
0 credit  
Fall Semester  
A non-credit review session to provide students with the skills necessary to prepare for the successful completion of the common body of knowledge courses.

ESP501 Fundamentals of Accounting  
3 credits  
Spring Semester  
The generally accepted principles governing the preparation of financial reports, the use of accounting information systems in collecting financial, and cost data used in investment decisions and controlling an enterprise are discussed.  
PREREQUISITE: LIMITED TO STUDENTS IN OVERSEAS PROGRAMS.

ESP510 Introduction to Business Statistics  
3 credits  
First Summer Session  
Data analysis, probability concepts, distributions, sampling, estimation, hypothesis testing, simple and multiple regression, and correlation analysis are discussed.  
PREREQUISITE: LIMITED TO STUDENTS IN OVERSEAS PROGRAMS.
University of Miami Bulletin, 2012-2013
Undergraduate Course Listing
SCHOOL OF BUSINESS ADMINISTRATION
EXECUTIVE & SPECIAL PROGRAMS

ESP521 Introduction to Information Systems
3 credits Offered By Announcement Only
Computer information system concepts, including spreadsheets, data management, and word processing.
PREREQUISITE: LIMITED TO STUDENTS IN OVERSEAS PROGRAMS.

ESP551 Organizational Behavior
3 credits Spring Semester
Exploration of relevant concepts, research findings and pragmatic implications of the behavioral sciences for the management of complex socio-technical systems.
PREREQUISITE: LIMITED TO STUDENTS IN OVERSEAS PROGRAMS.

ESP560 Fundamentals of Marketing
3 credits Fall Semester
Marketing problems experienced by top executives are examined. Fundamental problem-solving concepts are developed. Students consider problems of consumer needs, product planning, promotion, distribution, and pricing. The discovery and application of marketing management skills are developed through the use of cases and a major planning project.
PREREQUISITE: LIMITED TO STUDENTS IN OVERSEAS PROGRAMS.

ESP590 Macro- and Microeconomics
3 credits First Summer Session
An economic study of the environment in which the decision-making process takes place in management and the functional areas. Course is structured especially for students without an undergraduate background in economics.
PREREQUISITE: LIMITED TO STUDENTS IN OVERSEAS PROGRAMS.

FINANCE

FIN250 Personal Finance
3 credits Offered By Announcement Only
This course addresses all of the major personal financial planning problems that individuals and households encounter. It presents a model of the major elements of effective money management. All of the latest financial planning tools and techniques are discussed. (Not for credit for finance majors or minors.)

FIN300 Finance for Non-Business Majors
3 credits Fall & Spring Semester
This course provides an overview of modern finance for non-business majors. Topics include: how financial markets work, understanding financial pages in newspapers and the Internet, how stock and bond prices are determined, how investment portfolios are structured, concepts of risk and return, how companies manage their cash and investments and international finance. Not for credit for business students.
PREREQUISITE: JUNIOR STANDING.

FIN302 Fundamentals of Finance
3 credits Fall & Spring Semester & First Summer Session
Introduction to the basic tools and concepts in finance. This is the core class in finance for our undergraduate program. Topics include the financial framework of a business entity, taxes, the time value of money, capital market theory, financial risk measures, and capital budgeting. Note: to be eligible to major in finance, a student must earn a grade of B or higher in this class (a grade of B- does not qualify).
PREREQUISITE: MAS 201 OR EQUIVALENT, ECO 211, ACC 211.
FIN303 Intermediate Financial Management
3 credits Fall & Spring Semester & First Summer Session
This course provides an overview of financial decision-making by corporations. Building on topics covered in the introductory finance classes; this course develops the foundations of optimal financial policy and applies these principles to corporate financial decision-making including capital structure, capital budgeting, dividend policy, leasing, securities issuance and the role of investment banks, and mergers and acquisitions. Note: a student must have obtained a B or higher grade in FIN302 to major in Finance. Earning an A in this class or any other class or classes does not eliminate that requirement.
PREREQUISITE: FIN 302 & MAS 202

FIN308 Intermediate Financial Management for Entrepreneurs
3 credits Fall Semester
PREREQUISITE: FIN 302, MAS 202

FIN320 Investment and Security Markets
3 credits Fall & Spring Semester & First Summer Session
This course introduces students to both practical and theoretical aspects of investment with an emphasis on financial markets. Topics include valuation of financial securities such as stocks, bonds and options; modern portfolio theory; the process and institutional characteristics of investing. Note that this course does not address the details of individual security valuation and selection, i.e., this course is not about stock picking or about how to get rich by investing in the markets. Instead, this course attempts to help you develop a lasting conceptual framework in which to view the investment process and to analyze future ideas and changes in investment environment. This class is essential to any student considering a finance concentration. Note: A student must have obtained a B or higher in FIN302 to major in Finance. Earning an A in this class or any other class or classes does not eliminate this requirement.
PREREQUISITE: FIN 302, MAS 202

FIN330 International Finance
3 credits Fall & Spring Semester & First Summer Session
This course applies the principles of finance to international business decisions. Topics include the analysis of foreign exchange rates, balance of payments, characteristics and use of international financial institutions and instruments, the analysis and management of financial risk in the international environment, and financing multinational corporations. Note: a student must have a B or higher in FIN 302 to major in International Finance and Marketing (or Finance). Earning an A in this class or any other class or classes does not eliminate this requirement.
PREREQUISITE: FIN 302

FIN340 Real Estate Principles
3 credits Fall & Spring Semester
This course provides an introduction to basic principles and fundamental practices in the real estate industry. Students learn how to apply the principles of finance to the real estate industry. Topics include common institutional aspects, brokerage, contracting, financing, ownership, management, valuation, appraisal, and investment analysis.
PREREQUISITE: FIN 300 OR 302.
FIN404 Applications in Corporate Finance
3 credits
Spring Semester
An application of the concepts and tools of corporate finance. Primary emphasis on analyzing real-world cases dealing with liquidity issues, capital budgeting, firm valuation, advanced corporate financing, hedging with options and futures, corporate financial strategy, and other current issues in corporate finance.
PREREQUISITE: FIN 302, 303.

FIN405 Financial Modeling
3 credits
Fall & Spring Semester & First Summer Session
This course takes a variety of finance topics, which have been covered in the prerequisite courses, and implements them using practical spreadsheet models. Students will use the internet and financial databases to obtain input data for their models. Students will use Visual Basic for Applications (VBA) and design functions and macros to enhance their models. Students must have a solid working knowledge of Windows and Excel, as well as a good understanding of the material taught in the prerequisite finance classes. Students are required to also take FIN406, a co-requisite (zero credit) laboratory class, which provides hands-on instruction. Students must have a mobile ("lap-top") computer with the capability to run Windows-based software.
PREREQUISITE: FIN 302, 303, 320; CO-REQUISITE: FIN 406

FIN406 Financial Modeling Lab
0 credit
Fall & Spring Semester & First Summer Session
This is the lab component for FIN 405. Students must have a mobile computer with capability to run Windows based software.
PREREQUISITE: FIN 302, 303, 320; CO-REQUISITE: FIN 405

FIN410 Financial Institutions and Markets
3 credits
Fall Semester
This course examines financial institutions, such as banks (commercial, investment, mortgage, and savings), credit unions, insurance companies, pension funds, and mutual funds and the money markets in which they operate, and focuses on why they exist and how to manage them. Topics include financial intermediation and transmutation, monetary theory and policy, Federal Reserve management of the money supply, velocity of money, fiscal theory and policy, interest rates, and immunization.
PREREQUISITE: FIN 302, 320.

FIN411 Commercial Bank Management
3 credits
Spring Semester
This course introduces the theory and practice of asset-liability management by large publicly traded commercial banks, including the fundamental principles of structuring loans into balance sheets. A major objective of this class is to provide students sufficient background to enter the credit department in the executive development program of a major money center bank.
PREREQUISITE: FIN 302, 320.

FIN421 Investment Portfolio Management
3 credits
Fall & Spring Semester
This course covers the techniques of institutional and individual portfolio management. Topics include: Portfolio theory, diversification, asset allocation strategies, equity indexing, equity style management: Value versus growth, mutual funds, basics of hedge funds and fund of funds, ETF basics, introduction to private equity, equity and bond portfolio management strategies.
PREREQUISITE: FIN 302, 320.
FIN422 Speculative Markets and Derivatives
3 credits Fall & Spring Semester
This course is an introduction to derivative securities, and examines the nature of derivatives and applications of such instruments in investments and corporate settings. The emphasis is on derivatives of equity-based securities (such as stocks and stock indices), but coverage includes derivatives of debt-based securities (such as Treasury and Eurodollar securities). Topics include options, futures, forwards, and other derivatives, such as options on futures, foreign currency derivatives, swaps, exotic options, real options, as well as financial engineering using derivatives.
PREREQUISITE: FIN 302, 303, 320.

FIN425 Business and Security Valuation
3 credits Fall & Spring Semester
Applications of finance theory to the problem of valuing public and non-public companies. Multiplier models, discounted cash flow analysis, and the strengths and weaknesses of traditional security valuation methods are addressed in detail. Financial spreadsheet programs and data sources are an integral part of the course.
PREREQUISITE: FIN 302, 320.

FIN427 Fixed Income Markets and Analysis
3 credits Fall Semester
This course examines financial markets that trade fixed income securities. A fixed income security is based primarily on a debt contract, such as a bond, debenture, note or Treasury bill. Topics include the valuation, computation of return, and computation of various measures of risk for fixed income securities, as well as the analysis of the term structure of interest rates and various option features commonly included in debt contracts and fixed income securities. Students must have a solid working knowledge of Excel to take this class.
PREREQUISITE: FIN 320

FIN431 International Financial Management
3 credits Fall & Spring Semester
This is an advanced class in international finance from the viewpoint of multi-national organizations, including corporations, investment banks, and commercial banks. Topics include managing the various sources of risk, such as economic, political, and currency; cash receivables, inventory, and payables management; financing; transfer pricing; taxation; currency netting; capital budgeting; and hedging.
PREREQUISITE: FIN 302, 320, 330

FIN444 Real Estate Investment Analysis
3 credits Spring Semester
This course introduces the theoretical concepts and analytical techniques used to purchase an ownership interest in a commercial real estate project. There is heavy reliance on Excel applications and the use of the Argus database that is a standard resource in the commercial real estate market. Each student will complete a written evaluation and investment analysis of an existing or proposed commercial real estate project in Miami-Dade, Broward or Monroe County.
PREREQUISITE: FIN 302, FIN 303 OR FIN 320
FIN445 Real Estate Finance
3 credits
Fall Semester
This course introduces the theoretical concepts and analytical techniques used to make a decision to finance the purchase or development of a commercial real estate project. There is heavy reliance on Excel applications and the use of the Argus database that is a standard resource in the commercial real estate market. Students are also encouraged to use their semester projects to apply for one of the numerous case competitions.
PREREQUISITE: FIN 302, 303 OR FIN 320

FIN446 Practical Training in ARGUS Real Estate Software
0 credit
Offered By Announcement Only
Practical training in the use of ARGUS software for the financial analysis of real estate projects.
PREREQUISITE: NONE

FIN476 Pure Risk Management
3 credits
Offered By Announcement Only
The nature and objectives of corporate and personal risk management. Emphasis is placed on the recognition, evaluation, and treatment of the pure risks to which businesses and individuals are exposed.
PREREQUISITE: FIN 302, 303, 320.

FIN499 Special Topics in Finance
3 credits
Offered By Announcement Only
Topics in selected areas of specialization.
PREREQUISITE: FIN 302, 303, 320; REQUIRES DEPARTMENTAL APPROVAL

FIN546 Introduction to ARGUS for Real Estate Analysis
1 credit
Fall Semester
Introduction to real estate ownership analysis using proprietary ARGUS assumptions for different property types, purchase and resale assumptions and preparing reports for buyers and investors.
PREREQUISITE: UNDERGRADUATE SENIOR OR GRADUATE STATUS

FIN547 Advanced ARGUS and Excel for Real Estate Application
2 credits
Spring Semester
Advanced topics in real estate analysis using Excel and ARGUS, including discounted cash flow and leverage models, modeling hard and soft development costs, partnership analysis and depreciation waterfalls.
PREREQUISITE: FIN 546, UNDERGRADUATE SENIOR, OR GRADUATE

FIN555 Finance Honors Research Project
0-3 credits
Offered By Announcement Only
Research project to fulfill requirements for Departmental Honors in Finance.
PREREQUISITE: 3.9 GPA, SENIOR STANDING, PERMISSION OF INSTRUCTOR AND DEPARTMENT.
FIN590 Internship  
1 credit  Offered By Announcement Only  
Student is individually assigned to operating business firm or other organization to gain insight into management practice in area of career interest. Periodic reports and conferences are required. Approval of department is required at time of time of registration. Note: FIN 590 is an elective and is not for credit toward the major.  
PREREQUISITE: FIN 303, 320 AND PERMISSION OF DEPARTMENT CHAIRMAN. REQUIRES DEPARTMENTAL APPROVAL. NOTE: DOES NOT COUNT AS CREDIT TOWARDS MAJOR.

FIN599 Directed Study  
3 credits  Offered By Announcement Only  
Individually supervised research projects in selected finance topics. Approval of the Chairperson and advisor is required prior to registration.  
PREREQUISITE: FIN 302, 320. REQUIRES DEPARTMENTAL APPROVAL.

GENERAL BUSINESS AND MANAGEMENT  
GBM101 Exploring The Law: Essential Tools for preparing for a career in the Law  
3 credits  Fall Semester  
This course will give students the opportunity to learn about the area of law and what skills are needed to properly prepare for an undergraduate and law school education. The course is designed to provide students with the foundational knowledge and skills to become independent life-long learners, critical thinkers, effective communicators, problem solvers, and develop connections with the University of Miami legal community.  
PREREQUISITE: SSP

MANAGEMENT  
MGT100 First Step (Freshman Integrity, Responsibility, and Success through teamwork)  
3 credits  Fall Semester  
This course is designed to provide entering freshman business majors an enriched curriculum that examines key issues in the global business environment and emphasizes the importance of ethical business practices. The course culminates with a team project that encourages students to address real world problems and encourages a lifelong commitment to civic engagement.

MGT251 Nature and Foundations of Entrepreneurship  
3 credits  Spring Semester  
This course seeks to understand some of the basic social, legal, cultural, and economic infrastructure that enables and sustains the creation of new enterprises. Although conventional perspectives on entrepreneurship often overlook political or religious activists whose "products" are not "sold" in traditional markets, a more expansive view considers actions that transform idea into enterprises that generate intellectual, social, cultural, religious, or economic value. Theory, data, and case study will be covered to help students to think both broadly and deeply about what it means - and what it takes - to be an entrepreneur, and what characterizes the entrepreneurial society.

MGT270 Introduction to Health Sector Administration  
3 credits  Fall & Spring Semester  
This course provides a basic understanding of the components of the health care sector and their interrelationships. The role of hospitals, ambulatory care (including physicians), long-term care, mental health care, hospice care, and pharmaceuticals will be examined. The role of government financed (Medicare and Medicaid) and private health insurance in affecting decision making by health care consumers and providers will be examined as well. A historical context will be used.
MGT302 Human Resource Management
3 credits
Fall & Spring Semester
Theory and practice of modern personnel management related to the other management functions in the conduct of the enterprise. Attention is focused on the needs of the line executive as well as those intending to pursue a staff career.

MGT303 Operations Management
3 credits
Fall & Spring Semester
Problems and methods of planning the efficient utilization of capital, labor, equipment, and materials. Sales forecasting, production planning, production control, scheduling, routing, dispatching, expediting, materials planning, inventory control, capital budgets, and costing are discussed. The application of quantitative techniques in problem solving and decision making are included as well as case problems. PREREQUISITE: MAS 201.

MGT304 Organizational Behavior
3 credits
Fall & Spring Semester & First & Second Summer Session
First professional course in management. Concepts of organization, motivation, leadership, dynamics of the group, personality, organizational development strategies, and other behavioral aspects involved in the effective management of an organization are discussed.

MGT307 Advanced Organizational Behavior
3 credits
Fall & Spring Semester
Continuation of MGT 304--primarily for, but not limited to, BMO majors. Through case analysis and other relevant exercises, theories are applied to specific situations in organizational settings. PREREQUISITE: MGT 304.

MGT308 Training and Development
3 credits
Fall & Spring Semester & First & Second Summer Session
An examination of key issues in designing training and development programs. Topics include organizational needs analysis, training design and implementation, evaluation techniques, and understanding of how such programs interact with other human resource functions. PREREQUISITE: MGT 302 AND HRM/BMO MAJOR.

MGT349 International Business
3 credits
Fall & Spring Semester
An introduction to the theory and institutions relevant to the conduct of business internationally. Includes an overview of current business patterns and their historical antecedents; social systems in countries as they affect the conduct of business from one country to another; basic assessment of international activities that fall within functional disciplines; and analysis of alternative ways in which international business may evolve in the future.

MGT353 Introduction to Entrepreneurship
3 credits
Fall & Spring Semester
The opportunities for the organization and operation of the small business. Organization, location, financial planning, records, unit costs, merchandising, credits, and personnel are discussed. Opportunities in various other fields are also considered. PREREQUISITE: JUNIOR STANDING
MGT359 Comparative Management
3 credits Offered By Announcement Only
Analysis of professional management as affected by the cultural environments in which it operates in major industrial nations. The problems of trans-cultural managers in multinational structures is examined.

MGT360 Effective Leadership
3 credits Fall & Spring Semester
This course covers the key theories, models, and frameworks about the effective leadership of people in organizations. A multimedia approach is taken, using readings, films, lecture, discussion, and case analyses. The emphasis is on building a sound grasp of good practice, and on developing the ability to apply such knowledge to everyday leadership situations.
PREREQUISITE: MGT 304

MGT401 Strategic Management
3 credits Fall & Spring Semester
An integrative approach to strategy formulation and implementation, from a domestic and international perspective, is the focus of this core capstone course. All the primary areas of business are emphasized using cases and readings. Course is required of all graduating seniors in Business.
PREREQUISITE: GRADUATING SEMESTER BUSINESS SENIORS ONLY.

MGT422 Leading Teams
3 credits Offered By Announcement Only
The objectives of this course are to develop interpersonal communication and conflict management skills necessary to work in teams and exercise leadership in teams. Topics include team development, decision making, and managing conflict.
PREREQUISITE: MGT 304.

MGT428 Compensation and Benefits Design
3 credits Fall & Spring Semester
Theory techniques and procedures of Job Evaluation and Wage Incentive as a basis for managerial procedures. The development and evaluation of alternative means of determining the relative worth of jobs, and the conversion of data to actual base rates is discussed. The design, evaluation, and administration of wage incentive plans through the application of work measurement time values to jobs involving bonus, piece work, or time-saved provisions is also included.
PREREQUISITE: MGT 302 AND HRMMGT MAJOR.

MGT445 Supply Chain Modeling and Analysis
3 credits Fall & Spring Semester
This course will introduce students to managerial decision problems in modern supply chains, and will develop structured mathematical tools to model and solve these problems. Students will also learn to apply these tools through problem-solving exercises, experiential games, and spreadsheet-based case studies.
PREREQUISITE: MGT 303
MGT446 Supply Chain Strategy
3 credits                                                    Fall & Spring Semester
This course will deal with issues such as inventory management, supply chain design/coordination, revenue management, and sourcing. Each module discusses how a real company practices some aspect of supply chain strategy, and then reviews the concepts behind that practice. Tools are provided to analyze the concepts, distill their principles, and suggest guidelines for implementation and improvement.
PREREQUISITE: MGT 303

MGT454 Business Planning for Entrepreneurs
3 credits                                                             Fall Semester
The basics of starting a business for aspiring entrepreneurs. Topics include sources of capital, market choices, division of the equity pie, choice of distribution channels, choosing an accountant and a legal advisor, preparation of a business plan, and product design. Teams of students develop business plans to start new enterprises.
PREREQUISITE: MGT 353

MGT455 Entrepreneurial Consulting
3 credits                                                           Spring Semester
Students review techniques, methods, and organizational forms of management consultants. Emphasis on small business problems, particularly start-ups, is provided through preparation of consulting reports on written cases, guest speakers, and actual business firms or start-ups.
PREREQUISITE: MGT 353, 454

MGT459 International and Multinational Management
3 credits                                                    Fall & Spring Semester
Foreign environment for overseas operations with a survey involving economics, political, and social constraints. The effects of overseas investments on foreign economies with emphasis on the emerging managerial structures is included.

MGT480 Organizational Development and Change
3 credits                                                    Fall & Spring Semester
Course is intended for students who are interested in learning about how to manage, plan, and implement large-scale change efforts within organizations. Part of the course is devoted to organizational analysis techniques and the remainder addresses behavioral intervention strategies (including survey feedback, technostructural interventions, and team building).
PREREQUISITE: MINIMUM SOPHOMORE STANDING

MGT498 Selected Topics
1- 6 credits                          Fall & Spring Semester & First Summer Session
Topics in selected areas of specialization.

MGT540 Behavioral Aspects of Productivity
3 credits                                                Offered By Announcement Only
Productivity management impacts organizational strategy, efficiency, quality, and survival. Course examines these varied impacts and discusses the managerial issues related to productivity measurement, organizational values, incentives, gain sharing, motivation, organizational change, gain sharing, motivation, organizational change, and organizational politics. Course is taught from behavioral and systems theory viewpoints, focusing on how behavioral change impacts system productivity. Course is multidisciplinary and supplemented with examples of corporate applications.
MGT545 Self-Assessment and Career Development  
3 credits \hspace{1cm} Offered By Announcement Only  
Course provides a framework for individuals facing the complex process of making career decisions. Emphasis is placed on self-assessment to help students better understand their career motivations. Additional topics include job searches, interviewing, analyzing, choosing job offers, managing the first year on the job, developmental relationships such as mentoring, the early career experience, and managing a career over time.  
PREREQUISITE: MGT 304 + SENIOR STANDING.

MGT550 MGT Internship  
1 credit \hspace{1cm} Fall & Spring Semester & First & Second Summer Session  
Student is individually assigned to operating business firm or other organization to gain insight into management practice in area of career interest. Periodic reports and conferences are required. Cannot be used toward major requirements.  
PREREQUISITE: MAJOR/SPECIALIZATION IN MGT DEPARTMENT, MINIMUM 3.0 GPA, AND DEPARTMENT CHAIR APPROVAL PRIOR TO REGISTRATION.

MGT598 Selected Topics  
3 credits \hspace{1cm} Fall & Spring Semester & First & Second Summer Session  
Topics in selected areas of specialization.

MGT599 Directed Study  
1-6 credits \hspace{1cm} Fall & Spring Semester & First & Second Summer Session  
Individually supervised research projects in selected fields. Approval of supervising professor as to topic and evaluation of project required at time of registration. Only open to undergraduate students.  
PREREQUISITE: SENIOR STANDING + MAJOR IN MGT DEPARTMENT.

MANAGEMENT SCIENCE  
MAS105 Quantitative Methods in Business I  
3 credits \hspace{1cm} Offered By Announcement Only  
This course provides a background in algebra, linear equations, matrices, quadratic, exponential, and logarithmic functions appropriate for the successful understanding, interpretation, and use of these concepts and their application to business and economics within the Business School curriculum and in career endeavors. The course also provides an introduction to the mathematics of finance, interest rates, discounting of future returns, and linear programming.  
PREREQUISITE: HIGH SCHOOL ALGEBRA.

MAS110 Quantitative Applications in Business  
3 credits \hspace{1cm} Fall & Spring Semester & First & Second Summer Session  
Review of algebra emphasizing its application to supply and demand functions, market equilibrium, compound interest, and amortization. Differential calculus emphasizing its applications to marginal cost and revenue functions, maximization, taxation in competitive markets, and elasticity of demand are discussed. The application of integral calculus to total cost and profit of demand, to total cost and profit functions, consumer's and producer's surplus, computation of present value, and constrained optimization using partial differentiation are also included.  
PREREQUISITE: MTH107 OR EQUIVALENT.
MAS201 Introduction to Business Statistics
3 credits  Fall & Spring Semester & First & Second Summer Session
Data analysis and presentation, cross tabulations, descriptive statistical measures, probability, sampling, statistical inference, hypothesis testing for one and two populations, covariance and correlation analysis. Utilization of microcomputer statistical packages is also included.
PREREQUISITE: MAS 110 OR EQUIVALENT

MAS202 Intermediate Business Statistics
3 credits  Fall & Spring Semester & First & Second Summer Session
Chi-squared goodness of fit tests, and contingency tables, analysis of variance, simple linear regression, multiple regression, time series, forecasting, statistical methods of quality. Utilization of microcomputer statistical packages, case analyses, and presentations are also included.
PREREQUISITE: MAS 201.

MAS311 Applied Probability and Statistics
3 credits  Fall & Spring Semester
Descriptive statistics, basic probability, distribution theory, point and interval estimation, testing hypotheses, simple linear regression, correlation, and quality control charts are discussed. Examples are drawn from various disciplines. Lecture, 3 hours.
PREREQUISITE: PREREQUISITE OR COREQUISITE: MTH 162 OR 172

MAS312 Statistical Methods and Quality Control
3 credits  Fall & Spring Semester
Analysis of variance, multiple regression, and statistical quality control methodology, including reliability are discussed.
PREREQUISITE: MAS/IEN 311 OR EQUIVALENT.

MAS441 Deterministic Models in Operations Research
3 credits  Fall Semester
Introduction to deterministic mathematical models with applications to business problems. Topics include the methodology of operations research, linear, integer, and dynamic programming, project management, networks, multi-objective optimization and heuristics. Software packages are used for programming applications. Lecture, 3 hours.

MAS442 Stochastic Models in Operations Research
3 credits  Spring Semester
Introduction to probabilistic models and their applications. Topics include inventory theory, stochastic processes (queuing systems, Markov chains), and computer simulation. Lecture, 3 hours.
PREREQUISITE: MAS 311 OR EQUIVALENT.

MAS452 Systems Analysis Methodology and Applications
3 credits  Spring Semester
Solution of problems from the general systems point of view. Case studies are used with emphasis on report writing. The preparation of a project proposal and the conduct of the proposed study are also required.
PREREQUISITE: SENIOR STANDING OR PERMISSION OF INSTRUCTOR.
MAS499 Directed Study
1-3 credits Fall & Spring Semester & First Summer Session
Independent investigation of special problems. Offered by special arrangement only. Approval of supervising professor as to topic and evaluation of project required at time of registration.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

MAS547 Computer Simulation Systems
3 credits Fall Semester
Introduction to discrete-event computer simulation and hands-on development of simulation models. Topics include introduction to queuing theory, input and output analysis, random number generation, and variance reduction techniques. Students practice their modeling skills using commercial state-of-the-art simulation software. Assigned readings of real-life simulation projects complement the material learned in the classroom. Lecture, 3 hours.
PREREQUISITE: MAS/IEN 311 OR EQUIVALENT.

MAS548 Data Mining and Knowledge Acquisition
3 credits Spring Semester
This course provides an introduction to the principles and techniques of data mining. Topics covered include the data mining process, data preprocessing, data mining techniques and data mining evaluation. The course will involve a combination of lectures, labs, projects and case studies.
PREREQUISITE: MAS 201 & MAS 202

MAS550 Management Science Internship
1-3 credits Fall & Spring Semester & First Summer Session
Student is individually assigned to operating business firm or other organization to gain insight into management practice in area of career interest. Periodic reports and conferences are required. Permission of department chair is required prior to registration.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN. FOR CREDIT ONLY.

MAS555 Management Science Honors Research Project.
0-3 credits Offered By Announcement Only
Research project to fulfill requirements for Departmental Honors in Management Science.
PREREQUISITE: 3.9 GPA. SENIOR STANDING. PERMISSION OF INSTRUCTOR AND DEPARTMENT.

MAS595 Topics in Management Science
1-3 credits Fall & Spring Semester & First Summer Session
Topics in selected areas of specialization.

MAS596 Topics in Management Science
1-3 credits Fall & Spring Semester & First Summer Session
Topics in selected areas of specialization.

MARKETING
MKT201 Foundations of Marketing
3 credits Fall & Spring Semester
Understanding and satisfying consumer need through product planning, pricing, promotion, and distribution. Students identify and analyze marketing problems. Discovery and application of marketing skills are developed by marketing planning assignments, computer simulations, and case analysis.
PREREQUISITE: FOR SCHOOL OF BUSINESS FRESHMAN ONLY
MKT301 Marketing Foundations
3 credits Fall & Spring Semester & First Summer Session
Understanding and satisfying consumer needs through product planning, pricing, promotion, and distribution. Students identify and analyze marketing problems. Discovery and application of marketing skills are developed by marketing planning assignments, computer simulation, and case analysis.
PREREQUISITE: JUNIOR STATUS.

MKT302 Marketing Research and Market Analysis
3 credits Fall & Spring Semester
Examination of the process, role, and function of marketing research, including research problem formation, research methods and procedures, data acquisition, sampling theory and practice, data analysis, presentation of results, ethical issues, and application for each of the above.
PREREQUISITE: MAS 201, MAS 202 AND MKT 201 OR MKT 301

MKT310 Consumer Behavior and Marketing Strategy
3 credits Fall & Spring Semester
The study of behavioral science research findings, principles, and theories, especially those from psychology and sociology, as they relate to the determinants of consumer buying behavior. The case approach is utilized to stimulate the development of creative marketing strategy.
PREREQUISITE: MKT 201 OR MKT 301

MKT320 Retailing
3 credits Fall & Spring Semester & First Summer Session
Retail store management, location, buying, merchandise control, policies, services, pricing, expenses, profits, training and supervision of retail sales force, and administrative problems are discussed.
PREREQUISITE: MKT 201 OR MKT 301

MKT340 Professional Selling
3 credits Fall & Spring Semester & First Summer Session
Nature of the professional selling function and its relationship and contribution to the marketing strategy of organizations. Special emphasis is placed on broadly applicable principles and effective personal communication skills during the sales process.
PREREQUISITE: MKT 201 OR MKT 301

MKT360 International Marketing
3 credits Fall & Spring Semester & Second Summer Session
The major current factors affecting international marketing. Course is designed to acquaint students with the growing importance of world marketing in the U.S. and the strategic issues involved.
PREREQUISITE: MKT 201 OR MKT 301

MKT380 New Product Development
3 credits Fall & Spring Semester
This course enables students to appreciate the systematic approach that goes into the creation and marketing of new products. Practical aspects of developing and marketing new products are inculcated through two assignments and one class project.
PREREQUISITE: MKT 201 OR MKT 301
MKT385 Marketing for Entrepreneurs

3 credits  Fall & Spring Semester
This course is focused on the study and practice of marketing all aspects of an entrepreneurial venture: the new company itself as well as its products or services. Topics will include: branding, pricing and costing, buying behavior, market segmentation, channel management, as well as exploring issues such as intellectual property, customer service, corporate versus product web sites, media exposure and PR, and maintaining an integrated plan for building the venture's brand.
PREREQUISITE: MKT 201 OR MKT 301

MKT386 Advertising Management

3 credits  Fall & Spring Semester
In this course, students learn about the components involved in researching, planning, creating, and executing advertising strategies. The class gives students a better understanding of how advertising can be effectively used in a marketing strategy. Students also learn how advertising both influences and is influenced by cultural trends. Implications of this to both marketers and society as a whole are discussed.
PREREQUISITE: MKT 201 OR MKT 301.

MKT387 Internet Marketing

3 credits  Fall & Spring Semester
This course will introduce students to the principles of Internet marketing from both perspectives of theory and practice. On the theory side, students will learn foundations and recent research and development of internet marketing. Main contemporary internet marketing issues will be extensively discussed in class, including social media marketing, search engine marketing, e-commerce, online advertising, mass customization, and others. Students will also learn how to form an appropriate strategy for an internet marketing campaign and use quantitative skills to analyze the effectiveness of such a campaign. On the practice side, students will collaborate in teams and participate in real-world Google online marketing challenge. Students will grasp critical concepts of search engine optimization by working with a local business client, laying out a suitable pre-campaign strategy, implementing and modifying the campaign in real time, and summarizing the campaign results in a meaningful and concise manner when it is over.
PREREQUISITE: MKT 201 OR MKT 301 - MINIMUM CREDITS EARNED 42

MKT388 Health Care Marketing

3 credits  Fall & Spring Semester
This course is devoted to the study of health care marketing and the health care system involved with the task of marking products and services. As health care reform continues to evolve current market conditions and transform existing organizations into new practices, this course will focus on how managed care providers, hospitals, physicians, federal government, device and pharmaceutical companies will embrace the new patient centered market in their marketing strategies. Key learning objectives include: Healthcare System Interaction, Consumer Driven Market Research & Segmentation, Health Network Channel Partner Marketing Services vs. Good Marketing Variation, Healthcare Service Selection Drivers, Patient & Community Oriented Marketing Technology, Social Media & Advertising Impact on Health Marketing, Cause & Global Marketing Platforms in healthcare and Integrated Marketing & Marketing Variation between Healthcare Segments.
PREREQUISITE: MKT 201 OR MKT 301 OR PERMISSION BY THE DEPARTMENT CHAIR
MKT403 Marketing Management  
3 credits  
Fall & Spring Semester  
Marketing Management is a capstone course that examines new concepts and insights regarding marketing management. Through case analysis the course covers important aspects of marketing management. The students also participate in a simulation in which they manage multi-segment markets. 
PREREQUISITE: MKT 201 OR MKT 301, FIN 302 AND COMPLETION OF/OR CURRENTLY ENROLLED IN MKT 302.

MKT450 Marketing Internship  
1 credit  
Offered By Announcement Only  
The student is individually assigned to an operating business firm or other organization to gain insight into management practice in the area of their career interest. The internship cannot be used to satisfy course requirements for marketing majors or minors and periodic reports and conferences are required. Obtain permission of department chairman before enrolling. 
PREREQUISITE: DECLARED MARKETING OR IFM MAJOR, A MINIMUM OF 3.0 GPA AND APPROVAL OF SUPERVISING PROFESSOR AND DEPARTMENT CHAIRMAN.

MKT451 Marketing Internship  
1 credit  
Offered By Announcement Only  
The student is individually assigned to an operating business firm or other organization to gain insight into management practices in the area of their career interest. The internship cannot be used to satisfy course requirements for marketing majors and minors periodic reports and conferences are required. Obtain permission of department chair before enrolling. 
PREREQUISITE: DECLARED MARKETING OR IFM MAJOR, A MINIMUM OF 3.0 GPA AND APPROVAL OF SUPERVISING PROFESSOR AND DEPARTMENT CHAIRMAN.

MKT469 International Marketing Management  
3 credits  
Fall & Spring Semester  
International Marketing Management is a capstone course that examines new concepts and insights regarding international marketing management. Through case analysis the course covers important aspects of international marketing management. The students also participate in a simulation in which they manage multi-country markets. 
PREREQUISITE: MKT 360 AND COMPLETION OF/OR CURRENTLY ENROLLED IN MKT 302.

MKT497 Topics in Marketing  
3 credits  
Offered By Announcement Only  
Topics in selected areas of marketing.

MKT498 Topics in Marketing  
3 credits  
Offered By Announcement Only  
Topics in selected areas of Marketing.

MKT499 Undergraduate Directed Study  
1 credit  
Offered By Announcement Only  
Individually supervised readings or research projects. Restricted to students with superior academic records. Approval of supervising professor as to topic and evaluation of project required at time of registration. 
PREREQUISITE: SENIOR STANDING AND APPROVAL OF SUPERVISING PROFESSOR AND DEPARTMENT CHAIRMAN.
MKT555 Marketing Honors Research Project  

Offered By Announcement Only

3 credits

Research project to fulfill requirements for Departmental Honors in Marketing.
PREREQUISITE: 3.9 GPA. SENIOR STANDING. PERMISSION OF INSTRUCTOR OR DEPARTMENT.
CAD102 Graphic Design for Advertising I
3 credits
Fall & Spring Semester & First Summer Session

CAD114 Principles of Advertising
3 credits
Fall & Spring Semester
An introduction to the principles and practice of advertising in a free-market economy. Students will be introduced to several areas of advertising including account planning, creative strategy, media planning, research methods, consumer behavior, and integrated marketing. Emphasis on cultural, social, ethical, and regulatory aspects of advertising.

CAD201 Advertising Strategy Development
3 credits
Fall & Spring Semester
Introduction to the development of effective advertising strategies. Topics include consumer behavior, attitude development, persuasion tactics, targeting, market segmentation, market analysis, and brand management.
PREREQUISITE: CAD 114

CAD202 Graphic Design for Advertising II
3 credits
Fall & Spring Semester
An introduction to the art of visual communication as it relates to advertising design. Topics include typography, design principles, art and illustration, conceptualization and layout stages, color and color reproduction, printing processes, and production.
PREREQUISITE: CAD 102 OR ART 109, AND CAD 114

CAD231 Advertising Copywriting and Concept
3 credits
Fall & Spring Semester & First Summer Session
Introduction to writing advertising copy and conceptualizing campaign ideas for print, broadcast, out-of-home, interactive, and specialty media.
PREREQUISITE: CAD 114

CAD233 Writing for Account Management
3 credits
Fall & Spring Semester
Introduction to writing for the business side of advertising. This course will prepare students to write and create comprehensive reports and prepare presentations related to the business of account planning including research, creative strategies, and media planning.
PREREQUISITE: CAD 114   COREQUISITE: CAD 201

CAD290 Special Topics in Advertising
3 credits
Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR

CAD312 Research Methods for Advertising
3 credits
Fall & Spring Semester
Application of research techniques used in the field of advertising. Students will learn to collect, analyze, and report secondary and primary research findings as they apply to advertising decision-making.
PREREQUISITE: CAD 201,CAD 233 AND STATISTICS (PSY 204 OR MTH 224 OR MAS 201 OR SOC 211/212)
CAD340 Interactive, Digital, and Social Media in Advertising
3 credits
Offered By Announcement Only
The course will explore the use of new and evolving media in the development of effective advertising campaigns, as well as the impact of these media on the advertising industry.
PREREQUISITE: CAD 114

CAD350 International and Cross-cultural Advertising
3 credits
Offered By Announcement Only
This course will explore advertising in a global marketplace. Emphasis will be placed on understanding cultural differences as they relate to international advertising planning, as well as techniques for gathering secondary and primary data on international markets and consumers.
PREREQUISITE: CAD 114

CAD380 Advertising Internship
1- 3 credits
Fall & Spring Semester & First & Second Summer Session
Students select an internship in the field of advertising for on-the-job training. The student will work a minimum of 45 hours for each credit.
PREREQUISITE: JUNIOR STANDING, MINIMUM GPA OF 2.75, AND PERMISSION OF PROGRAM DIRECTOR

CAD384 Advertising Creative Strategy and Execution
3 credits
Fall & Spring Semester & First Summer Session
Development of effective creative campaigns. Students will design advertisements for print, broadcast, interactive, and specialty media that meet specific campaign objectives.
PREREQUISITE: CAD 201, CAD 202, AND CAD 231

CAD388 Media Planning
3 credits
Fall & Spring Semester & First Summer Session
An introduction to the principles and concepts of advertising media planning including media selection, media plan development, forecasting, and budgeting.
PREREQUISITE: CAD 201 AND CAD 233 OR PERMISSION OF INSTRUCTOR

CAD389 Media Buying and Advertising Sales
3 credits
Offered By Announcement Only
Students will learn the art of buying media in all categories, as well as how to sell advertising space in these media.
PREREQUISITE: CAD 201

CAD390 Art Direction
3 credits
Fall & Spring Semester
Students will learn art direction skills for both print and electronic media including newspapers, magazines, outdoor, television, radio, and the internet.
PREREQUISITE: CAD 202, CAD 231, AND CAD 384

CAD401 Seminar in Advertising and Society
3 credits
Offered By Announcement Only
This course will examine the ethical, persuasive, cultural, societal, and economic effects of advertising, focusing on the theoretical frameworks that explain how advertising works in these arenas.
PREREQUISITE: CAD 201; JUNIOR STANDING
CAD412 Public Opinion and Mass Communication  
3 credits  
Fall Semester  
An exploration of the formation and role of public opinion in mass communication. Emphasis is placed on its role in advertising and promotion. Topics include the evolution and history of public opinion in American culture, the application of public opinion on attitude formation and persuasion, measurement of public opinion, and propaganda.

CAD434 Advertising Campaigns  
3 credits  
Fall & Spring Semester & First Summer Session  
Capstone course in which students develop a full-scale advertising campaign. Students are responsible for conducting secondary and primary research, strategic planning, development of creative executions, planning and executing media selections, and campaign evaluation.  
PREREQUISITE: GENERAL TRACK: CAD 114, CAD 201, CAD 231 OR CAD 232, CAD 312 AND CAD 388; MANAGEMENT TRACK: CAD 114, CAD 201, CAD 233, CAD 312 AND CAD 388; CREATIVE TRACK: CAD 114, CAD 201, CAD 202, CAD 231, AND CAD 384

CAD438 Practicum in Advertising  
3 credits  
Fall & Spring Semester & First & Second Summer Session  
Students will work in the advertising field for advanced on-the-job training in their specific area of advertising specialization.  
PREREQUISITE: CAD 380, SENIOR STANDING, AND PERMISSION OF PROGRAM DIRECTOR

CAD483 Integrated Marketing Communication  
3 credits  
Offered By Announcement Only  
An exploration of how brands are built and promoted through the integration of advertising, public relations, sales promotion, personal selling, direct marketing, and e-commerce.

CAD490 Special Topics in Advertising  
3 credits  
Offered By Announcement Only  
This course subject matter varies according to announced special topic. See class schedule for details.  
PREREQUISITE: SENIOR STANDING; ADMISSION TO MAJOR; PERMISSION OF INSTRUCTOR

CAD491 The Business of Account Management  
3 credits  
Spring Semester  
PREREQUISITE: CAD 201, CAD 233, CAD 312, AND CAD 388

CAD495 Advertising Management  
3 credits  
Fall & Spring Semester  
Students will learn to approach advertising problems at both micro and macro levels from the perspective of a manager in charge of solving such problems. Emphasis will be on problem identification, development of alternative strategies to solve problems, tactics for executing strategies, and evaluation of proposed solutions.  
PREREQUISITE: CAD 201, CAD 233, CAD 312, CAD 388  COREQUISITE: CAD 434

CAD496 Portfolio Development  
3 credits  
Fall & Spring Semester  
This course will assist students in putting together a professional-quality advertising portfolio of their work.  
PREREQUISITE: CAD 201, CAD 202, CAD 231, CAD 384, CAD 434
CAD498 AAF National Student Advertising Campaign Competition
3 credits  Spring Semester
Students compete in the American Advertising Federation's National Student Advertising Campaign Competition.
PREREQUISITE: PERMISSION OF INSTRUCTOR

CAD499 Projects and Directed Research in Advertising
3 credits  Fall & Spring Semester & First & Second Summer Session
Individual study.
PREREQUISITE: PERMISSION OF INSTRUCTOR; JUNIOR STANDING; ADMISSION TO MAJOR

COMMUNICATION
COM101 Mass Media Communication in Society
3 credits  Fall & Spring Semester & First Summer Session
A survey of the history, development, structure, and effects of mass communication media.

COM110 Communication Theory
3 credits  Fall & Spring Semester & First & Second Summer Session
Survey of basic communication theories and models. Study of processes, functions, levels, and general principles of human communication.

COM250 Freedom of Expression and Communication Ethics
3 credits  Fall & Spring Semester & Second Summer Session
Survey of basic communication theories and models. Study of processes, functions, levels, and general principles of human communication.

COM395 Honors Seminar in Communication
3 credits  Fall & Spring Semester
An examination of central issues and topics in the field of Communication.
PREREQUISITE: SENIOR STANDING AND ENROLLMENT IN THE SCHOOL'S HONORS PROGRAM

COM401 Honors Communication Colloquium
3 credits  Fall & Spring Semester
An examination of central issues and topics in the field of Communication.
PREREQUISITE: JUNIOR OR SENIOR STANDING AND ENROLLMENT IN THE SCHOOL'S HONORS PROGRAM

COM406 SPECIAL TOPICS IN COMMUNICATION
3 credits  Offered By Announcement Only
Course subject matter varies according to announced special topic. See class schedule for details.
PREREQUISITE: PERMISSION OF INSTRUCTOR OR PROGRAM DIRECTOR

COM499 Senior Honors Project/Thesis
3 credits  Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: SENIOR STANDING AND ENROLLMENT IN THE SCHOOL'S HONORS PROGRAM

COM598 Special Topics in Communication
3 credits  Offered By Announcement Only
This course subject matter varies according to announced special topic. See class schedule for details.
PREREQUISITE: 12 CREDITS IN COMMUNICATION AT 300 LEVEL OR ABOVE OR EQUIVALENT,
PERMISSION OF INSTRUCTOR
COS112 Interpersonal Communication
3 credits
Offered By Announcement Only
Overview of current theories of interpersonal communication. Consideration is
given to impression formation, relationship between self-concept and others, function
of language in social interaction, and development and maintenance of relationships.

COS210 Writing for Communication Studies
3 credits
Spring Semester
Principles of writing, reviewing literature, and synthesizing research for communication
studies and the social sciences.
PREREQUISITE: COM 110

COS211 Public Speaking
3 credits
Fall & Spring Semester & First & Second Summer Session
Introduction to effective audience communication including theory and extensive
practice in oral presentations.

COS304 Intercollegiate Debate Theory and Practice
1 credit
Fall & Spring Semester
A course designed to teach students how to compete successfully in intercollegiate
debate, and to reinforce training through practice and competition.
PREREQUISITE: PERMISSION OF INSTRUCTOR

COS316 Small Group Communication
3 credits
Offered By Announcement Only
Techniques of discussion applied to goal-oriented, small group situations. Consideration
is given to research methods, leadership, and conflict resolution. Theory is applied
to active classroom participation.

COS318 Nonverbal Communication
3 credits
Offered By Announcement Only
Theory and application of selected areas of research in nonverbal communication
is addressed. Discussion of environment, space, body movement, posture, eye contact,
facial expression, vocal cues, and physical appearance is included.

COS324 Health Communication
3 credits
Fall & Spring Semester
This course is designed to provide a broad introduction to human communication
in a health-care context. Emphasis will be on issues of social support, patient-health
professional/caregiver interaction, organizational culture, planning health promotion
campaigns, and cultural conceptions of health and illness.

COS333 Business Communication
3 credits
Fall & Spring Semester & First & Second Summer Session
Study and practice in the major forms of spoken and written communication in the
context of businesses and other professional organizational settings.
PREREQUISITE: JUNIOR STANDING

COS336 American Political Campaign Communication
3 credits
Offered By Announcement Only
Uses and functions of communication in American and international politics. Communication
during political events and campaigns is also addressed.
COS343 Introduction to Intercultural Communication
3 credits Offered By Announcement Only
Introduction to communication among people from diverse cultures. Application of communication theory to intercultural sensitivity and cultural diversity is emphasized.

COS351 Qualitative Research Methods
3 credits Spring Semester
Course is designed to introduce students to a sample of qualitative research methods used in communication.
PREREQUISITE: COM 110, COS 210

COS353 Quantitative Communication Research Methods and Analyses
3 credits Fall Semester
Introduction to communication research methods. Application of quantitative measurement techniques and statistical analyses will be discussed as well as the use of microcomputer statistical programs.
PREREQUISITE: COM 110, COS 210

COS377 Argumentation and Debate
3 credits Offered By Announcement Only
Argumentation theory and practice are discussed. Rhetorical and philosophical foundations of argumentation and their application in various settings, including academic debate, are also covered.

COS391 Undergraduate Special Topics in Communication Studies
3 credits Offered By Announcement Only
Course subject matter varies according to announced special topic. See class schedule for details.

COS405 Practicum in Communication Studies
1-3 credits Fall & Spring Semester & First & Second Summer Session
Structured participation in programmatic research and applied practice in the community.
PREREQUISITE: JUNIOR STANDING AND PERMISSION OF INSTRUCTOR

COS418 Organizational Communication
3 credits Offered By Announcement Only
Introduction to organizational communication theory. Consideration of structure, function, and effects of communication in organizations are analyzed. Emphasis is placed on principles needed for decision making and effective management of organizational communication processes.

COS455 Advanced Research Methods in Communication
3 credits Spring Semester
Advanced Research Methods in Communication is designed to provide students with continued instruction in research methods beyond the introductory quantitative course. Special attention is paid to (a) measurement problems, (b) complex research designs, and (c) statistical analysis of data.
PREREQUISITE: COM 110, COS 353

COS472 Persuasion
3 credits Offered By Announcement Only
A review of theory, research, and practice of the intentional use of symbols to influence attitudes, beliefs, and actions.
COS479 Capstone for Communication Studies
3 credits  
Capstone course designed for communication studies majors. Provides students with the opportunity to apply knowledge of communication theory and research skills through development of capstone project.  
PREREQUISITE: COM 110, COS 351, COS 353, SENIOR STANDING, OR PERMISSION OF INSTRUCTOR

COS498 Communication Studies Internship
1-3 credits  
Fall & Spring Semester & First & Second Summer Session  
Prescribed study and supervised work with practitioners in organizations.  
PREREQUISITE: JUNIOR STANDING AND PERMISSION OF FACULTY SUPERVISOR

COS499 Projects and Directed Research
1-3 credits  
Fall & Spring Semester & First & Second Summer Session  
Individual study. No more than three credits may be counted toward a Communication major or minor.  
PREREQUISITE: 12 CREDITS IN COMMUNICATION STUDIES AND PERMISSION OF SUPERVISING INSTRUCTOR

COS545 Intercultural Communication: International Perspectives
3 credits  
Offered By Announcement Only  
Effects of cultural attitudes, beliefs, and attributions on meaning assignment. Effects of language on the structure of thought. Ethics and process of the diffusion of cultural innovations are analyzed.  
PREREQUISITE: PERMISSION OF INSTRUCTOR

COS546 Intercultural Communication: Domestic Perspectives
3 credits  
Offered By Announcement Only  
Effects of cultural attitudes, beliefs, and attributions on meaning assignment. Diffusion of cultural innovations, prejudice, discrimination, and equality are discussed. Emphasis is placed on intercultural interactions within the United States.  
PREREQUISITE: PERMISSION OF INSTRUCTOR

COS560 The Executive Communicator
3 credits  
Offered By Announcement Only  
Audience analysis, speech writing, delivery in professional presentations, theory, and history of great speeches are covered. Detailed critiques of student speaking styles and performances are also included.  
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR

COS591 Advanced Special Topics in Communication Studies
3 credits  
Offered By Announcement Only  
This course subject matter varies according to announced special topic. See class schedule for details.  
PREREQUISITE: PERMISSION OF INSTRUCTOR

COS599 Advanced Projects and Directed Research
1-6 credits  
Fall & Spring Semester & First & Second Summer Session  
Individual study. Course may be repeated to a maximum of six credits.  
PREREQUISITE: PERMISSION OF INSTRUCTOR
CEM102 Introduction to Electronic Media
3 credits  Fall & Spring Semester
Technology, history, economics, regulation, and social roles of radio, television, cable, satellite, online, and other electronic media.

CEM201 Writing for the Electronic Media
3 credits  Fall & Spring Semester
Principles of writing for radio and television. Communicating in the aural and visual modes in persuasive, informational, and dramatic contexts is emphasized.
PREREQUISITE: CEM 102, ENG 105

CEM206 Special Topics in Electronic Media I
3 credits  Offered By Announcement Only
This course subject matter varies according to announced special topics. See class schedule for details.
PREREQUISITE: PERMISSION OF INSTRUCTOR OR PROGRAM DIRECTOR

CEM233 Television Performance
3 credits  Fall & Spring Semester
Introduction to communication concepts and skills involved in typical on-camera duties such as interviewing, commercials, characterizations, and ad-libbing.
PREREQUISITE: CEM 102, OR NON-MAJORS, PERMISSION OF INSTRUCTOR

CEM235 Radio Production Performance
3 credits  Spring Semester
Introduction to equipment and procedures of radio. Production of radio programs and formats, editing, announcing, sequencing program elements, and designing program formulas are discussed.
PREREQUISITE: CEM 102

CEM245 Introduction to Electronic Media Production
3 credits  Fall & Spring Semester
Introduction to the theory, process, and procedure of electronic media production. Lecture and laboratory are included.

CEM301 Electronic Media Research and Theories
3 credits  Fall & Spring Semester
Survey of qualitative and quantitative research methods used to collect and analyze data on broadcast, cable and online audiences. Course also covers theories to explain how electronic media influence individuals and society. Practice in conducting small-scale audience measurement is included.
PREREQUISITE: CEM 102

CEM302 Electronic Media Law
3 credits  Fall & Spring Semester
Course provides analysis of laws and other forces that influence broadcasting, cable, and online media operations. Examines the application of the First Amendment to media operations with a focus on press law.
PREREQUISITE: COM 101, CEM 102 AND SOPHOMORE STANDING. STUDENTS MAY NOT TAKE BOTH CEM 302 AND CNJ 303 FOR CREDIT.
CEM306 Special Topics in Electronic Media II
3 credits
Offered By Announcement Only
This course subject matter varies according to announced special topics. See class schedule for details.
PREREQUISITE: PERMISSION OF INSTRUCTOR AND PROGRAM DIRECTOR

CEM313 Electronic Media Sales
3 credits
Offered By Announcement Only
Operation of sales departments at radio, television, and cable outlets. Course includes the preparation and delivery of sales presentations, and use of audience research reports. Online and print media sales are examined in context.
PREREQUISITE: CEM 102

CEM314 Broadcast and Cable Programming
3 credits
Fall & Spring Semester
Course covers categories and sources for selecting program materials used in radio, television, and cable television program services. Strategies employed in devising program services are also covered.

CEM315 Acting for the Camera
3 credits
Offered By Announcement Only
Dramatic performance techniques for television and motion pictures. Lecture and laboratory are included.
PREREQUISITE: CEM 233, NON-MAJORS NEED PERMISSION OF INSTRUCTOR

CEM317 Broadcast Journalism
3 credits
Fall & Spring Semester
Preparation of materials for presentation through the broadcast/cable media with emphasis on news writing for oral presentation by studio anchors and field reporters. Course examines issues facing the profession of broadcast journalism, radio and TV reporting techniques, and news program formats.
PREREQUISITE: CNJ 111, CNJ 216

CEM345 Intermediate Electronic Media Production
3 credits
Fall & Spring Semester
Planning and execution of complex field, studio, and multimedia production in a variety of lengths and formats. High level skills in television control room situations and non-linear editing will be used to produce audio, video, and online content.
PREREQUISITE: CEM 245

CEM402 Strategic Media Management
3 credits
Spring Semester
This capstone course focuses on strategic decision-making involved with developing and managing electronic media enterprises. The course concludes with student entrepreneurs generating comprehensive business plans for a proposed media enterprise. Although intended primarily for media management majors, other qualified students may be admitted with permission of instructor.
PREREQUISITE: CEM 403 AND CEM 435, OR PERMISSION OF INSTRUCTOR

CEM403 Media Economics
3 credits
Spring Semester
Economic concepts, practices, and issues as they relate to the mass media industry.
PREREQUISITE: JUNIOR STANDING
CEM406 Special Topics in Electronic Media III
3 credits Offered By Announcement Only
This course subject matter varies according to announced special topics. See class schedule for details.
PREREQUISITE: PERMISSION OF INSTRUCTOR OR PROGRAM DIRECTOR

CEM408 International Electronic Media Systems
3 credits Fall Semester
Seminar on world broadcasting systems and trans-national communication services. Discussion of contemporary issues involving electronic media systems worldwide.
PREREQUISITE: SENIOR STANDING OR PERMISSION OF INSTRUCTOR

CEM417 Advanced Broadcast Journalism
3 credits Fall & Spring Semester
This capstone course concentrates on gathering and preparing news stories for presentation in news programs. Includes field reporting, editing, and preparation of visual and aural TV elements, writing, producing and performing for on-air presentation. Lecture and laboratory are included.
PREREQUISITE: CEM 245, CEM 317

CEM427 Television Newscast
3 credits Fall & Spring Semester
Studio anchoring, newscast producing, and field reporting for news and public affairs programming.
PREREQUISITE: CEM 417

CEM435 Telecommunication Systems
3 credits Fall Semester
The convergence and interrelationship of broadcast, cable, satellite, telephone, computer, and other telecommunication technologies and industries, with emphasis on policy, effects, regulation, economics, management, and information content.
PREREQUISITE: JUNIOR STANDING

CEM445 Advanced Electronic Media Production
3 credits Fall Semester
The integration of the producer's role and the structure of program design as they relate to day-to-day production operations. Lecture and laboratory are included.
PREREQUISITE: CEM 345

CEM446 Electronic Media Production Design
3 credits Offered By Announcement Only
A communication-based synthesis of the production process.
PREREQUISITE: CEM 345

CEM491 Internship in Broadcasting and Allied Fields
1-3 credits Fall & Spring Semester & First & Second Summer Session
Course provides a prescribed study and supervised work with practitioners in broadcasting, broadcast journalism, and allied fields.
PREREQUISITE: SENIOR OR JUNIOR STANDING, MAJOR IN COMMUNICATION, CUMULATIVE GPA OF 2.5 IN ALL COURSES OFFERED FOR COMMUNICATION MAJOR, AND PERMISSION OF INSTRUCTOR. BROADCAST JOURNALISM MAJORS MUST HAVE COMPLETED CEM 317
CEM499 Projects and Directed Research
1-3 credits Fall & Spring Semester & First & Second Summer Session
Individual study. No more than three credits may be counted toward a communication major or minor.
PREREQUISITE: 12 CREDITS IN COMMUNICATION AND PERMISSION OF SUPERVISING INSTRUCTOR

CEM517 Television News Reporting
3 credits Fall & Spring Semester
PREREQUISITE: CEM 245 AND CEM 317 FOR UNDERGRADUATE STUDENTS. PERMISSION OF INSTRUCTOR FOR GRADUATE STUDENTS.

CEM527 Television Newscast
3 credits Fall & Spring Semester
PREREQUISITE: CEM 417 OR CEM 517

CEM531 Audio Production Techniques
3 credits Offered By Announcement Only
Writing, preparation, and production of material for auditory presentation, live or recorded, broadcast on open or closed circuit radio systems. Familiarization with magnetic and optical recording procedures, both double and single system sound, in television and motion picture production is discussed. Lecture and laboratory are included.
PREREQUISITE: PERMISSION OF INSTRUCTOR

CEM534 Practicum in Communication
3 credits Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR

CEM535 Telecommunication Systems
3 credits Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR

CEM592 Special Topics in Electronic Media
3 credits Offered By Announcement Only
This course subject matter varies according to announced special topic. See class schedule for details.
PREREQUISITE: PERMISSION OF INSTRUCTOR AND PROGRAM DIRECTOR

CEM599 Advanced Projects and Directed Research
1-6 credits Fall & Spring Semester & First & Second Summer Session
Individual study. Course may be repeated for a maximum of six credits.
PREREQUISITE: PERMISSION OF SUPERVISING INSTRUCTOR
CNJ111 Introduction to News Media Writing  
3 credits  
Fall & Spring Semester  
Principles and practices in journalism for the mass communication media.  

CNJ216 News Reporting and Writing  
3 credits  
Fall & Spring Semester & First Summer Session  
Practice in gathering material for and preparation of stories.  
PREREQUISITE: CNJ 111. STUDENTS TRANSFERRING CREDIT FOR CNJ 111 MUST PASS THE ENGLISH-LANGUAGE SKILLS AND TYPING TESTS REQUIRED FOR CNJ 111  

CNJ300 Journalism Practicum  
1- 3 credits  
Fall & Spring Semester  
Prescribed study and supervised work with faculty and staff of the student newspaper or related news media. Students receive first-hand knowledge and experience in a working news environment.  
PREREQUISITE: PERMISSION OF THE PRACTICUM SUPERVISOR  

CNJ303 Mass Media Law  
3 credits  
Fall & Spring Semester & First Summer Session  
Study of defamation, right of privacy, journalists’ privilege, advertising law, constitutional guarantees, and Communications Act guarantees.  
PREREQUISITE: ONE OF THE FOLLOWING: CAD 232, CNJ 216, OR CPR 232. STUDENTS MAY NOT TAKE BOTH CNJ 303 AND CEM 302 FOR CREDIT  

CNJ319 History of Journalism  
3 credits  
Fall Semester  
The development and impact of American journalism.  

CNJ381 Newspaper Editing and Layout  
3 credits  
Fall Semester  
Introduction to electronic editing and development of skills in copy editing, headline writing, picture editing, and newspaper layout.  
PREREQUISITE: CNJ 216  

CNJ382 Publication Planning and Editing  
3 credits  
Offered By Announcement Only  
Procedures for designing and publishing company publications, trade, general and special interest magazines, newsletters and web sites.  
PREREQUISITE: CNJ 216  

CNJ401 Editorial Interpretation of Contemporary Events  
3 credits  
Offered By Announcement Only  
Critical examination of fundamental issues in public life. Preparation of editorials and interpretive articles for mass media are included.  
PREREQUISITE: SENIOR STANDING OR PERMISSION OF THE INSTRUCTOR
CNJ441 Business Reporting
3 credits Offered By Announcement Only
A study of the major types and styles of business news and feature stories with emphasis on understanding business culture, values, and terminology.
PREREQUISITE: CNJ 216 OR PERMISSION OF THE INSTRUCTOR

CNJ442 Online Journalism
3 credits Offered By Announcement Only
A study of the issues, skills and practices related to the online presentation of news and information in a convergent media environment.
PREREQUISITE: CNJ 216 OR PERMISSION OF THE INSTRUCTOR

CNJ444 Public Affairs Reporting
3 credits Fall Semester
Emphasis on reporting, writing and analysis about institutions, issues and actions of local government, and their effects on society.
PREREQUISITE: CNJ 216, CNJ 303 AND JUNIOR STANDING

CNJ445 In-depth Journalism and Media Convergence
3 credits Fall & Spring Semester
A capstone experience that requires students to use effectively their full range of journalistic knowledge, newsgathering, and writing skills to prepare news and information for different media platforms.
PREREQUISITE: CNJ 216, CNJ 303 OR CEM 302, SENIOR STANDING, MAJOR IN PRINT, BROADCAST, VISUAL JOURNALISM, OR PERMISSION OF THE INSTRUCTOR

CNJ446 Travel Writing
3 credits Offered By Announcement Only
A study of the major types and styles of travel news and features stories for newspapers, magazines, newsletters, and web sites.
PREREQUISITE: CNJ 216 OR PERMISSION OF THE INSTRUCTOR

CNJ461 Seminar in News Ethics and Problems
3 credits Spring Semester
Ethical, practical, and professional problems of news communicators in society.
PREREQUISITE: SENIOR STANDING IN JOURNALISM, BROADCAST JOURNALISM, VISUAL JOURNALISM, PUBLIC RELATIONS, OR PERMISSION OF INSTRUCTOR

CNJ495 Internship in Newspaper/Magazine/Web site
1-3 credits Fall & Spring Semester & First & Second Summer Session
Prescribed study and supervised work with professionals in newspapers, magazines, web sites, or related news media.
PREREQUISITE: CNJ 303, ADVANCED JUNIOR STANDING, MAJOR IN COMMUNICATION, CUMULATIVE GPA OF 2.5 IN ALL COURSES OFFERED IN COMMUNICATION, AND PERMISSION OF THE INSTRUCTOR

CNJ499 Projects and Directed Research
1-3 credits Fall & Spring Semester & First & Second Summer Session
Individual study. No more than three credits may be counted toward a Communication major or minor.
PREREQUISITE: 12 CREDITS IN COMMUNICATION AND PERMISSION OF SUPERVISING INSTRUCTOR
CNJ510 Comparative Media Systems
3 credits Offered By Announcement Only
This course deals with issues in international news gathering and distribution, giving special attention to Latin America and the Caribbean. The class takes a comparative approach, looking at media systems in the United States and other nations.
PREREQUISITE: PERMISSION OF INSTRUCTOR

CNJ511 Global Media
3 credits Offered By Announcement Only
An analysis of issues and practices surrounding globalization, regionalization, and global/local as they relate to media industries, journalism, and communication.
PREREQUISITE: PERMISSION OF INSTRUCTOR

CNJ513 Computer-Assisted Reporting
3 credits Offered By Announcement Only
Use of computer applications for newsgathering with emphasis on the World Wide Web, commercial online services, and database tools.
PREREQUISITE: CNJ 216 OR PERMISSION OF INSTRUCTOR

CNJ515 Reporting and the Internet
3 credits Offered By Announcement Only
Overview of uses of online computer services for newsgathering and distribution with emphasis on the Internet.
PREREQUISITE: CNJ 216 OR PERMISSION OF INSTRUCTOR

CNJ517 International Journalism
3 credits Offered By Announcement Only
PREREQUISITE: COM 601

CNJ522 Principles of Interactive Design
3 credits Fall Semester
This is an advanced multimedia design course that focuses on techniques and methods to create the best user experience in multimedia journalism projects.
PREREQUISITE: PERMISSION OF INSTRUCTOR

CNJ523 Sports Reporting
3 credits Offered By Announcement Only
An analysis of sports journalism that will develop students' skills in sports reporting and sports writing. Discussions range across the entire field of sports reporting, including broadcasting, but the greatest emphasis is concentrated on sports reporting and writing for newspapers and magazines.
PREREQUISITE: CNJ 216 OR PERMISSION OF INSTRUCTOR

CNJ544 Feature Writing
3 credits Offered By Announcement Only
Analyzing and writing feature articles for magazines, newspapers, and other news media.
PREREQUISITE: PERMISSION OF INSTRUCTOR

CNJ595 Special Topics in Journalism
3 credits Offered By Announcement Only
This course subject matter varies according to announced special topic. See class schedule for details.
PREREQUISITE: PERMISSION OF INSTRUCTOR
CNJ599 Advanced Projects and Directed Research
1-6 credits Fall & Spring Semester & First & Second Summer Session
Individual study. Course may be repeated to a maximum of six credits.
PREREQUISITE: PERMISSION OF SUPERVISING INSTRUCTOR

MOTION PICTURES

CMP103 Survey of Motion Pictures
3 credits Fall & Spring Semester & First Summer Session
Examination of the aesthetic, social, and economic aspects of the motion picture industry. Concentration on the present state of the medium with particular emphasis on future trends.

CMP126 Introduction to Screenwriting
3 credits Fall & Spring Semester & First & Second Summer Session
Creation and formatting of narrative material for motion pictures. Emphasis on writing the short film.
PREREQUISITE: CMP 103 OR CEM 102 AND ENG 106

CMP151 Introduction to Digital Production
3 credits Fall & Spring Semester & First Summer Session
Lectures and laboratory work to acquaint the student with the basic techniques of motion pictures. Digital equipment is used to develop an understanding of the motion picture as a creative tool of communication and expression.

CMP204 History of International Cinema I
3 credits Fall Semester & First Summer Session
Examination of the origin and history of the motion picture. Narrative and non-fiction genres in the American and world cinemas from their inception through 1940 are discussed.

CMP205 History of International Cinema II
3 credits Spring Semester & Second Summer Session
Examination of the history of the motion picture from 1941 to the present. Narrative and non-fiction genres in the American and world cinemas are included.

CMP251 Motion Picture Workshop: Storytelling
3 credits Fall & Spring Semester & Second Summer Session
The practice of the grammar of cinematic language including shot selection, composition, pacing, story clarity, performance, pre-visualization and pre-planning for the creation of short narrative projects. Through critiques, students encounter and interact with an audience of their peers. This course requires students to master contemporary technology in use in the profession.
PREREQUISITE: CMP 151

CMP326 Intermediate Screenwriting
3 credits Fall & Spring Semester & Second Summer Session
Study of, and practice in, writing feature length, narrative motion pictures. Development of story line in treatment form, attention to cinematic structure, the development of character, and its presentation on screen is discussed.
PREREQUISITE: CMP 126

CMP329 Writing for Series Television
3 credits Fall Semester
An introduction to the structures and techniques of writing situation-comedy and dramatic series television.
PREREQUISITE: CMP 126
CMP351 Introduction to Film Production
3 credits                     Fall & Spring Semester
Introduction to key set crew positions through lectures, exercises and the production of a collective narrative assignment. Students are required to master contemporary and traditional technology in use in the profession including 16mm cameras and synch sound recording.
PREREQUISITE: CMP 103, CMP 126, CMP 151, CMP 204, CMP 205, AND CMP 251

CMP353 Post Production Sound Editing and Design
3 credits                     Fall & Spring Semester
Post production sound editing and design is a seminar/workshop that provides a practical and theoretical introduction to sound and its function in the narrative moving image process. The course explores the process from production recording through the final mix.
PREREQUISITE: CMP 351 AND PERMISSION OF INSTRUCTOR

CMP356 Cinematography
3 credits                     Fall Semester
An overview of the cinematographer's process from script to screen. Working with camera, lighting, and grip equipment on exercises and projects is discussed.
PREREQUISITE: CMP 351

CMP357 Editing
3 credits                     Fall Semester
Introduction to the theory and practice of motion picture editing. Short editing assignments are designed to develop students' understanding of aesthetic, and technical considerations in the art of dramatic editing.
PREREQUISITE: CMP 351

CMP359 Motion Graphics, Compositing and Animation
3 credits                     Fall Semester
This course is an introduction to 2D animation, motion graphics and compositing techniques. All essential technical and aesthetic possibilities are explored in a series of projects. All projects are designed to provide the student with a thorough grounding in contemporary professional practices.
PREREQUISITE: PERMISSION OF INSTRUCTOR

CMP364 Business of Motion Pictures
3 credits                     Fall & Spring Semester
An examination of the industry's three part structure-production, distribution and exhibition. Consideration given to intellectual property, motion picture "creative accounting" and changes affected by new technologies. Surveys both studio films and independents.
PREREQUISITE: CMP 103, CMP 151

CMP386 Online Screenwriting
3 credits                     Fall & Spring Semester & First & Second Summer Session
The student will prepare and complete the first act of a feature-length screenplay or the student will prepare and commence the rewrite of an existing screenplay.
PREREQUISITE: PERMISSION OF INSTRUCTOR
CMP394 Special Topics in Motion Pictures
3 credits
Fall & Spring Semester
This course subject matter varies according to announced special topic. See class schedule for details.
PREREQUISITE: CMP 204, CMP 205 OR PERMISSION OF INSTRUCTOR

CMP395 Directing Techniques I
3 credits
Fall & Spring Semester
To teach the craft of directing through exercises, screen work, and readings.
PREREQUISITE: CMP 251

CMP401 Nonfiction Film and Digital Media
3 credits
Fall Semester
An examination of American and world nonfiction films and media.
PREREQUISITE: CMP 151 OR PERMISSION OF INSTRUCTOR

CMP403 Film Directors
3 credits
Fall Semester
The study of the film authorship through a focus on specific directors.
PREREQUISITE: CMP 204 AND 205, NON-MAJORS BY PERMISSION OF INSTRUCTOR

CMP404 Aspects of Contemporary Cinema
3 credits
Spring Semester
Study of contemporary movements in American and world cinemas.
PREREQUISITE: CMP 204 AND 205, NON-MAJORS BY PERMISSION OF INSTRUCTOR

CMP406 Genres
3 credits
Offered By Announcement Only
Study of selected genres from a variety of critical perspectives. Issues pertaining to methodologies of defining and categorizing film are discussed.
PREREQUISITE: CMP 204 AND 205, NON-MAJORS BY PERMISSION OF INSTRUCTOR

CMP407 National Cinemas
3 credits
Offered By Announcement Only
Selected films from Europe, Asia, Africa and Latin America will be studied in relation to their diverse social, political and cultural contexts.
PREREQUISITE: CMP 204 AND 205, NON-MAJORS BY PERMISSION OF INSTRUCTOR

CMP408 Women, Media, and Popular Culture
3 credits
Offered By Announcement Only
Examination of film, media, and gender representation from the perspective of feminist theory and cultural studies. Students explore the many ways that women have been portrayed, and how they have portrayed themselves, within popular culture.
PREREQUISITE: CMP 204 OR CMP 205, NON-MAJORS BY PERMISSION OF INSTRUCTOR

CMP426 Advanced Screenwriting
3 credits
Spring Semester
A continuation of CMP 326. Study of, and practice in, writing feature length, narrative motion picture scripts. Attention is given to cinematic structure, the development of character, and its presentation on screen. Emphasis is placed on bringing the script to a completed draft.
PREREQUISITE: CMP 326
CMP429 Advanced Television Writing  
3 credits  
Spring Semester  
This course explores how to create, format, and write the original Television Pilot and treatment. The class will cover TV pilot format, length, structure as well as techniques in creating TV characters and situations for both comedy and dramatic episodic TV.  
PREREQUISITE: CMP 329

CMP451 Motion Picture Practicum  
3 credits  
Fall & Spring Semester  
The theory and practice of motion pictures production from script to screen. Lecture and laboratory. Students will develop and produce a narrative, a documentary, or an experimental work of their choice.  
PREREQUISITE: CMP 351 AND PERMISSION OF INSTRUCTOR

CMP455 Producing the Motion Picture.  
3 credits  
Spring Semester  
A practical examination of the development, production and marketing responsibilities involved in producing theatrical feature films. Focus is placed on the process including the ethical considerations that confront the producer.  
PREREQUISITE: JUNIOR STANDING AND 12 MOTION PICTURE CREDITS.

CMP456 Advanced Cinematography  
3 credits  
Spring Semester  
Advanced work with camera, lighting, and grip equipment on exercises and projects.  
PREREQUISITE: CMP 356 OR PERMISSION OF INSTRUCTOR

CMP457 Advanced Editing  
3 credits  
Spring Semester  
Advanced concepts in aesthetics and theories of picture and sound editing, mixing, color correction, and finishing techniques.  
PREREQUISITE: CMP 357 OR PERMISSION OF INSTRUCTOR

CMP458 Documentary Production  
3 credits  
Fall & Spring Semester & First Summer Session  
Students produce two short digital documentaries and explore various approaches to the documentary film.  
PREREQUISITE: CMP 151 OR PERMISSION OF INSTRUCTOR

CMP459 Advanced Motion Graphics, Compositing, and Animation  
3 credits  
Fall & Spring Semester  
This is an advanced animation, compositing, and motion graphics workshop in which students will design a three to five minute production from script to final product.  
PREREQUISITE: CMP 359, EEN 596, OR PERMISSION OF INSTRUCTOR

CMP462 Motion Picture Marketing and Distribution  
3 credits  
Fall Semester  
Economic and marketing considerations in the production and distribution of motion pictures.  
PREREQUISITE: CMP 364
CMP465 Producing the Motion Picture
3 credits  
Fall Semester
A practical examination of the development, production and marketing responsibilities in producing theatrical feature films. Focus is placed on the processes involved including the ethical considerations that confront the producer.
PREREQUISITE: CMP 364

CMP469 Legal Aspects of Motion Pictures
3 credits  
Spring Semester
The law, contracts, and negotiating techniques of the business affairs aspect of the production of motion pictures.
PREREQUISITE: CMP 364

CMP489 Projects in Screenwriting
3 credits  
Fall & Spring Semester
Individual study. This course and CMP 499 cannot count for more than three credits towards a Communication major or minor.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CMP494 Motion Picture Internship
1-3 credits  
Fall & Spring Semester & First & Second Summer Session
Prescribed study and supervised work with practitioners in motion pictures.
PREREQUISITE: SENIOR OR JUNIOR STANDING, ADMISSION TO MAJOR IN MOTION PICTURES, CUMULATIVE GPA OF 2.5 IN ALL COURSES OFFERED FOR COMMUNICATION MAJOR.

CMP499 Projects and Directed Research
1-3 credits  
Fall & Spring Semester & First & Second Summer Session
Individual study. No more than three credits may be counted toward a Communication major or minor.
PREREQUISITE: 12 CREDITS IN COMMUNICATION AND PERMISSION OF SUPERVISING INSTRUCTOR.

CMP501 Principles of Aesthetics and Analysis
3 credits  
Fall Semester
PREREQUISITE: LIMITED TO MFA CANDIDATES

CMP503 Film Directors
3 credits  
Fall Semester
This course will address the conditions of authorship in film through an intensive study of the films of two or more directors, whose careers will serve as case studies. These directors will be historically important and their work will represent significant achievements in the art of film.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR

CMP504 Aspects of Contemporary Cinema
3 credits  
Offered By Announcement Only
The study of the ways in which film communicates. Intensive analysis and criticism of cinematic techniques exemplified through particular films.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR

CMP506 Genres
3 credits  
Offered By Announcement Only
A study of selected movie genres from a variety of critical perspectives. Issues pertaining to selfhood, sexual difference, and other concerns of present-day film criticism will be examined.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR
CMP507 National Cinemas  
3 credits Spring Semester  
Selected films from Europe, Asia, Africa and Latin America will be studied in relation to their diverse social/political and cultural contexts.  
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

CMP509 Legal Aspects of Motion Pictures  
3 credits Spring Semester  
The law, contracts, and negotiating techniques of the business affairs aspects of the production of motion pictures.  
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF THE DIRECTOR OF THE MOTION PICTURE PROGRAM

CMP510 Foundation of Screenwriting  
3 credits Fall Semester  
PREREQUISITE: LIMITED TO MFA CANDIDATES

CMP511 Writing the Short Film  
3 credits Offered By Announcement Only  
PREREQUISITE: CMP 510, LIMITED TO MFA CANDIDATES

CMP520 Cinematography  
3 credits Fall Semester  
PREREQUISITE: LIMITED TO MFA CANDIDATES

CMP529 Nonfiction Film  
3 credits Offered By Announcement Only  
An examination of American and world nonfiction films.  
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

CMP530 Introduction to Editing  
3 credits Spring Semester  
PREREQUISITE: LIMITED TO MFA CANDIDATES

CMP550 Production Workshop I - Narrative  
3 credits Spring Semester  
Methods, techniques and aesthetics of 2D computer animation and compositing including animated text, title design and green screen.  
PREREQUISITE: LIMITED TO MFA CANDIDATES

CMP551 Advanced Motion Graphics and Compositing  
3 credits Spring Semester  
Extend the 2D skills of students who have taken CMP 550 to 3D motion graphics and animation. Emphasis on title design and animation.  
PREREQUISITE: CMP 550 OR PERMISSION OF INSTRUCTOR

CMP552 Motion Picture Marketing and Distribution  
3 credits Fall Semester  
Economic and marketing considerations in the production and distribution of motion pictures.  
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF THE DIRECTOR OF THE MOTION PICTURE PROGRAM
MOTION PICTURES

CMP553 Advanced Motion Picture Marketing
3 credits
Offered By Announcement Only
Advanced marketing considerations in the distribution of motion pictures.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR

CMP558 Documentary Production
3 credits
Offered By Announcement Only
An introduction to the documentary genre including the production of a documentary from start to finish.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR

CMP560 Directing the Actor
3 credits
Fall Semester
PREREQUISITE: LIMITED TO MFA CANDIDATES

CMP566 Character and Dialogue
3 credits
Offered By Announcement Only
An examination of the craft and techniques of creating original characters and dialogue.
PREREQUISITE: MFA SCREENWRITING STATUS OR PERMISSION OF INSTRUCTOR

CMP570 Producing the Motion Picture
3 credits
Spring Semester
PREREQUISITE: LIMITED TO MFA CANDIDATES

CMP586 Online Screenwriting
3 credits
Fall & Spring Semester & First & Second Summer Session
The student will prepare and complete the first act of a feature-length screenplay or the student will prepare and commence the rewrite of an existing screenplay.
PREREQUISITE: PERMISSION OF INSTRUCTOR

CMP594 Special Topics in Motion Picture
3 credits
Offered By Announcement Only
This course subject matter varies according to announced special topic. See class schedule for details.
PREREQUISITE: PERMISSION OF INSTRUCTOR

CMP595 Directing Techniques
3 credits
Fall & Spring Semester
To build a more advanced set of professional skills and practices through scene work, shooting, and collaboration.
PREREQUISITE: CMP 251 OR PERMISSION OF INSTRUCTOR

PUBLIC RELATIONS

CPR116 Principles of Public Relations
3 credits
Fall & Spring Semester
History, organization, ethics, law, and practice of public relations.

CPR202 Design Principles and Techniques
3 credits
Fall & Spring Semester
Introduction to graphic design for communication media and use of computer software as layout and design tools. Selection, preparation, and study of design principles and production processes for typography, photography, art work, and white space.
PREREQUISITE: CPR 116 OR PERMISSION OF INSTRUCTOR
CPR232 Writing for Public Relations  
3 credits                                                    Fall & Spring Semester  
Principles and techniques for the development of creative strategies, concepts, and writing of effective public relations messages for all types of media.

CPR311 Public Relations Research  
3 credits                                                    Fall & Spring Semester  
Public relations research techniques focusing on applications of strategic planning, message evaluation, opinion research, and theory testing of public relations programs. Emphasis on qualitative and quantitative methods and data analysis.  
PREREQUISITE: ADMISSION TO MAJOR OR PERMISSION OF INSTRUCTOR

CPR346 Advanced Public Relations Writing and Design  
3 credits                                                    Fall & Spring Semester  
Preparation, execution, and production of visual messages for public relations media.  
PREREQUISITE: CPR 116, CPR 202 AND CPR 232 OR PERMISSION OF INSTRUCTOR

CPR380 Public Relations Internship  
1- 3 credits                 Fall & Spring Semester & First & Second Summer Session  
Supervised activities in public relations. No more than 3 credits of internship may be used toward the major. Not a required course.  
PREREQUISITE: AT LEAST SECOND-SEMESTER JUNIOR, ADMISSION TO THE MAJOR, AND PERMISSION OF PROGRAM DIRECTOR.

CPR416 Public Relations Ethics  
3 credits                                              Offered By Announcement Only  
Ethical concepts and issues pertaining to individuals and society with application to advertising and public relations. Case studies focus on professional and personal ethics based on traditional teaching, modern codes, and other guidelines.  
PREREQUISITE: ADMISSION TO MAJOR AND PERMISSION OF INSTRUCTOR

CPR436 Public Relations Campaigns  
3 credits                                                    Fall & Spring Semester  
The capstone course for seniors in their last year of study. Theory and principles, audience research, strategic planning, and targeted communication are applied in developing a campaign to influence attitudes and behavior on behalf of a real client. A written plan, professional presentation, and teamwork are emphasized.  
PREREQUISITE: ADMISSION TO MAJOR; CPR 311, CPR 346, SENIOR STANDING, OR PERMISSION OF INSTRUCTOR

CPR490 Special Topics in Public Relations  
3 credits                                                    Fall & Spring Semester  
This course subject matter varies according to announced special topic. See class schedule for details.  
PREREQUISITE: ADMISSION TO MAJOR, JUNIOR STANDING, PERMISSION OF INSTRUCTOR AND PROGRAM DIRECTOR

CPR499 Projects and Directed Research in Public Relations  
1- 3 credits                 Fall & Spring Semester & First & Second Summer Session  
Individual study. No more than three credits may be counted toward a Communication major or minor.  
PREREQUISITE: ADMISSION TO MAJOR, JUNIOR STANDING, PERMISSION OF INSTRUCTOR AND PROGRAM DIRECTOR
CPR517 Media Relations
3 credits  Fall & Spring Semester & First Summer Session
The practice of media relations within the public relations milieu.
PREREQUISITE: ADMISSION TO MAJOR, CPR 311, SENIOR STANDING OR PERMISSION OF INSTRUCTOR

CPR582 International Public Relations
3 credits  Fall & Spring Semester
History, theory, and practice of public relations in a global, multi-cultural environment.
PREREQUISITE: ADMISSION TO MAJOR, SENIOR STANDING OR PERMISSION OF INSTRUCTOR

CPR584 Public Relations Management
3 credits  Spring Semester
Principles and practice of public relations management in a variety of contexts including agency, consultancy, corporate, and nonprofit.
PREREQUISITE: ADMISSION TO MAJOR, CPR 311, AND SENIOR STANDING OR PERMISSION OF INSTRUCTOR

CPR590 Special Projects: Public Relations
3 credits  Offered By Announcement Only
This course subject matter varies according to announced special topic. See class schedule for details.
PREREQUISITE: ADMISSION TO THE MAJOR, CPR 311, SENIOR STANDING, PERMISSION OF INSTRUCTOR, AND PERMISSION OF PROGRAM DIRECTOR

CPR599 Advanced Projects and Directed Research in Public Relations
1-6 credits  Fall & Spring Semester & First & Second Summer Session
Individual study. May be repeated to a maximum of six credits.
PREREQUISITE: ADMISSION TO MAJOR, CPR 311, SENIOR STANDING, PERMISSION OF SUPERVISING INSTRUCTOR, AND PERMISSION OF PROGRAM DIRECTOR

VISUAL JOURNALISM
CVJ106 Visual Design
3 credits  Fall & Spring Semester
This course is a project-based introduction to design. Emphasis will be placed on visual concepts and graphic design for multimedia. Students will be introduced to various software packages to design and integrate interaction into their projects. Topics covered include preparing existing content for multimedia journalism, animation, layout for interactive media, typography, photography, and usability.

CVJ209 Introduction to Multimedia Storytelling
3 credits  Fall & Spring Semester
This course is a lab-lecture course that introduces students to the concepts of visual storytelling and teaches skills needed to gather information in the visual storytelling process. Students work in teams with still photography, video, and audio-gathering devices to document community life.
PREREQUISITE: CVJ 106; COREQUISITE: CVJ 221

CVJ221 Introduction to Documentary Photography
3 credits  Fall & Spring Semester
Introduction to photojournalism is a course designed to help you develop the skills needed to produce successful images and recognize what makes good photographs in terms of content, composition, and technical quality. The course will help you acquire and develop the intellectual, analytical, and technical skills needed to become strong visual storytellers. Students are required to have a 35 mm camera.
PREREQUISITE: CVJ 106 OR PERMISSION OF INSTRUCTOR; COREQUISITE: CEM 245 OR CMP151
CVJ309 Database Journalism
3 credits
Spring Semester
This course teaches data analysis and interactive deployment of the World Wide Web and other digital platforms. Students will learn to analyze data for journalistic work and will be expected to create and deploy database-driven applications.
PREREQUISITE: CVJ 106, CVJ 209, CVJ 221, CVJ 341, OR PERMISSION OF INSTRUCTOR

CVJ331 Information Graphics and Visualization
3 credits
Fall & Spring Semester
This is an introduction to informal graphic procedures and practices as they pertain to print and online media. Layout and design, typography, mechanical production techniques, and production vocabulary will be an integral part of this course.
PREREQUISITE: CVJ 106, CVJ 209, CVJ 221, CVJ 341 OR PERMISSION OF INSTRUCTOR

CVJ341 Web Design
3 credits
Fall & Spring Semester
This course covers the basic aspects of interaction design and web development, focusing on production processes. It provides an overview of web design concepts including usability, accessibility, information architecture, basic animation, and graphic design; all discussed in the context of the web environment. This course further offers an introduction to fundamental and emerging web trends.
PREREQUISITE: CVJ 106 OR CAD 102 OR CPR 202, OR PERMISSION OF INSTRUCTOR

CVJ361 Advanced Documentary Photography
3 credits
Fall & Spring Semester
Advanced Photojournalism is a class designed to improve the visual storytelling, newsgathering, and photographic technical skills introduced in the intro to Photojournalism class. Students will be expected to integrate into the community to make contacts and develop story ideas worthy of visual documentation. The class will explore how quality photojournalism has the potential to affect change in a community, a country, and beyond.
PREREQUISITE: CVJ 221, CEM 245 OR CMP 151, OR PERMISSION OF INSTRUCTOR

CVJ396 Special Topics in Visual Journalism
3 credits
Fall & Spring Semester
This course subject matter varies according to announced special topic. See class schedule for details.
PREREQUISITE: PERMISSION OF INSTRUCTOR

CVJ409 Advanced Feature Design
3 credits
Fall Semester
Advanced newspaper, magazine, and electronic design. Students will develop the skills necessary to produce strong visual packages combining type, photography, artwork, and white space. The course will cover advanced design and traditional reproduction techniques for art and copywriting as well as on-line presentations.
PREREQUISITE: CVJ 106, CVJ 209, CVJ 221, CVJ 341, CVJ 331

CVJ419 Interactive Storytelling
3 credits
Fall & Spring Semester
This course explores how storytelling is reinventing itself utilizing the new digital communication tools available. It will cover linear and non-linear storytelling techniques and production processes. (Capstone)
PREREQUISITE: CVJ 106, CVJ 209, CVJ 221, CVJ 341
CVJ422 Programming for Interactivity
3 credits  Fall & Spring Semester
This course is a multimedia class that will teach the fundamental programming skills required to create compelling online multimedia stories. Programming taught in this class caters specifically for non-programmers who want to learn how to present their work online in an interactive manner.
PREREQUISITE: CVJ 209, CVJ 341, CVJ 419, OR PERMISSION OF INSTRUCTOR

CVJ435 Video Journalism
3 credits  Fall Semester
An advanced visual journalism course to develop skills in video pre-production, production, and post-production with special emphasis on documentary approaches for on-line media.
PREREQUISITE: CVJ 209, CVJ 106, CVJ 221, CVJ 341, CVJ 361

CVJ496 Internship in Visual Journalism
1-3 credits  Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: JUNIOR STANDING AND PERMISSION OF INSTRUCTOR

CVJ499 Projects and Directed Research
1-3 credits  Fall & Spring Semester
PREREQUISITE: SENIOR STANDING AND PERMISSION OF INSTRUCTOR

CVJ519 Interactive Storytelling
3 credits  Spring Semester
Digitization allows us to merge several forms of media that were not connected in the past. This course is intended as an exploration of how storytelling is re-inventing itself utilizing the new digital communication tools available to us today. This course will cover linear and non-linear storytelling techniques and production processes.
PREREQUISITE: CVJ 521, CVJ 522, CVJ 530, OR PERMISSION OF INSTRUCTOR

CVJ521 Seminar in Visual Storytelling
3 credits  Fall Semester
An advanced seminar class designed to enhance the knowledge and practice of the visual storytelling narrative. This seminar stresses the importance of converging media, still images, video, and sound. Particular emphasis will be placed upon the creation of a multimedia portfolio.
PREREQUISITE: GRADUATE STATUS OR PERMISSION OF INSTRUCTOR

CVJ522 Interaction Design and Information Visualization
3 credits  Fall Semester
The course will require an advanced use of typography, architecture of design, and creative style for layout and design for the print or online media. This is a portfolio design class. Each student will concentrate on an area of specialty within print or electronic design. All portfolios will be reviewed by outside art and design directors.
PREREQUISITE: GRADUATE STATUS OR PERMISSION OF INSTRUCTOR

CVJ530 Programming for Interactivity
3 credits  Fall Semester
This course is a multimedia class that will teach the fundamental programming skills required to create compelling online multimedia stories.
PREREQUISITE: GRADUATE STATUS OR PERMISSION OF INSTRUCTOR
CVJ531 Database Journalism
3 credits Fall Semester
This course teaches data analysis and interactive deployment of data of the World Wide Web and other digital platforms.
PREREQUISITE: GRADUATE STATUS OR PERMISSION OF INSTRUCTOR

CVJ541 Advanced Audio Video Narratives
3 credits Spring Semester
This course examines uses of audio and video to communicate journalism. Students learn to investigate, gather content, and produce documentary stories primarily for online distribution.
PREREQUISITE: CVJ 521 OR PERMISSION OF INSTRUCTOR

CVJ550 3D Design and Graphics
3 credits Spring Semester
This course develops informational graphic procedures and practices as they pertain to print and online media, specifically in the context of news and journalism.
PREREQUISITE: GRAD STATUS OR PERMISSION OF INSTRUCTOR

CVJ551 Advanced Programming
3 credits Second Summer Session
This course explores the role of the programmer as journalist. Students will perform the basic tasks of journalism from a programmatic perspective including: gathering, distilling and presenting information. Students will learn how to gather information from public databases and government websites. They will learn how to automate processes for filtering information and learn how to present this information in a visual and interactive news report. Students will also learn how to combine multiple sources of information, to personalize information for the end reader, and account for the relevant permutations of the data. Students will learn to build and query databases as well as mine and visually present the information using programming languages such as PHP and Python. Rapid development frameworks such as Django, Zend and Symfony will also be covered in the class.
PREREQUISITE: CVJ 530, CVJ 521, CVJ 522, PERMISSION OF INSTRUCTOR

CVJ560 Team Multimedia Project
1- 3 credits Second Summer Session
Students will work in a team to produce a documentary multimedia project in conjunction with one or more partner universities. Students will study the genre of documentary multimedia storytelling, research their assigned topic(s), content-gather, edit, wireframe, design and program the project and produce it on multiple platforms depending on the topic and intended audience. Students will use audio, photographic, video, infographic and text reporting tools in producing the project. They will also study methodologies for evaluating multimedia and beta test the site using established research methodologies.
PREREQUISITE: CVJ 530, CVJ 521, CVJ 522, COM 601, COM 603, CNJ 614 OR PERMISSION BY INSTRUCTOR

CVJ596 Special Topics in Visual Journalism
1- 6 credits Fall & Spring Semester
This course subject matter varies according to announced special topic. See class schedule for details.
PREREQUISITE: PERMISSION OF INSTRUCTOR
CVJ599 Advanced Projects and Directed Research

3 credits

PREREQUISITE: PERMISSION OF SUPERVISING INSTRUCTOR

Fall & Spring Semester
EPS201 Psychosocial Change and Well-being  
3 credits  
Fall & Spring Semester  
Explores the integration of individual, organizational, and community approaches to the promotion of health and well-being. Emphasis will be placed on real-life applications in multiple settings such as schools, workplaces, government, and non-government institutions.

EPS270 Lifespan Human Development  
3 credits  
Fall & Spring Semester  
Processes and theories of human development from birth to old age are explored. Areas to be covered include: physical development, cognitive development, social and personality development, moral development, and language development. Emphasis is placed on development as a life-long process and its importance in understanding human behavior.

EPS280 Introduction to Family Studies: Dating, Coupling, Parenting  
3 credits  
Fall & Spring Semester  
Theory and practice of romantic relationships and parent-child relationships, including discussion and skills building. Research based information on how to maximize the quality of these interpersonal relationships will be examined.

EPS291 Community and Character Development  
3 credits  
Spring Semester  
The course covers moral and psychological dimensions pertaining to character development as it occurs in communities. Topics include contemporary theory and research regarding perspectives on virtue and morality, states of character, ethical decision making, and character development. The reciprocal relationships between character and community will be a central theme in exploring ethical issues that arise in working with individuals, institutions, and communities. Theory and research will be linked to relevant applications.

EPS304 Mentored Research Studies  
1-3 credits  
Fall & Spring Semester & First & Second Summer Session  
Under the guidance of EPS faculty and graduate students, undergraduate students will have an opportunity to get involved in various components of research study; gain valuable knowledge and research experience; and expand their undergraduate academic experience.  
PREREQUISITE: SIGNED PERMISSION OF HSD FACULTY MEMBER AGREEING TO SERVE AS A RESEARCH MENTOR. SOPHOMORE STANDING OR ABOVE (CAN BE WAIVED AT THE DISCRETION OF THE SUPERVISOR)

EPS306 Insanity and Humanity: Mental Illness, Society, Stigma and Services  
3 credits  
First Summer Session  
The genesis for this course was the generally poor, inaccurate and stigmatized understanding of mental illness in society based on portrayals in popular media including Hollywood produced films. However, over the past several years the depth and accuracy of awareness and knowledge has changed, as the depiction of mental illness and treatment services in films has improved and the availability of narrative accounts has increased. This course is designed to allow Human and Social Development majors, with a particular interest in wellness and human services, to explore varying portrayals of mental illnesses in popular media. The course will foster critical analysis of narrative and film depictions of illness, as well as connect these depictions to a broader narrative on stigma, social determinants of illness and wellness, prevention and intervention.  
PREREQUISITE: TBD
EPS311 Group Processes and Development
3 credits
Fall Semester
Research findings concerning the nature of small groups and patterns of behavior associated with them are explored. Students experience an ongoing group process to which theories and concepts can be applied. Emphasis is placed on learning to be a participant observer of group behavior and processes, learning about one's own behavior in groups, and developing skills to be a more effective member and leader in task groups.

EPS321 Understanding Human Service Organizations
3 credits
Fall Semester
Focus on unique role of community-based human service organizations in society with an overview and history of community organizations, which provide services, support, advocacy, and organizing in today's communities. Review of the systems, cultures, structures, and processes of community organizations with a special emphasis on promoting well-being in communities. This course has a 10 hour field research experience requirement.
PREREQUISITE: EPS 201. PREREQUISITE OR COREQUISITE: EPS 311

EPS340 Psychology and Sociology of Sexual Identity
3 credits
Fall & Spring Semester
History, psychology, and sociology of gay, lesbian, and transgendered populations.
PREREQUISITE: PSY 110 OR SOC 101.

EPS351 Introduction to Statistics and Research Design
3 credits
Fall Semester
The course will cover basic statistics relevant to the social sciences (e.g., central tendency, variation, t-tests, and correlations), with emphasis on real world applications employing commonly used research designs. Students will acquire the tools necessary to interpret elementary statistical analyses and a foundation in the basic analytic methods used in conducting quantitative research in the behavioral sciences.
PREREQUISITE: MTH 101 OR ABOVE; EPS 201 (PREREQUISITE OR COREQUISITE)

EPS360 Educational Psychology
3 credits
Fall & Spring Semester & First & Second Summer Session
A review of basic educational psychology principles including cognitive and language development, personal, social and moral development, learning theories, and motivation. A review of basic concepts that contribute to effective learning and other aspects of education.
PREREQUISITE: SOPHOMORE STANDING OR PSY 110.

EPS361 Community Psychology & Development
3 credits
Fall Semester
Community psychology is about the prevention of psychosocial problems and the promotion of mental health and wellbeing through the creation of equitable and just social settings, neighborhoods, communities, and societies. Course topics include: stress & social support; oppression and human diversity; primary prevention, social intervention and health promotion; self-help; mediating structures; community mental health; alternative settings; community development and social change.
PREREQUISITE: EPS 201
EPS362 Introduction to Multiple Intelligence
3 credits  First & Second Summer Session
Students will be provided with an awareness of both the Multiple Intelligence Model and Brain Based Learning, through lectures, discussions, and exercises. The student will identify their learning styles in order to discuss strengths and deficits. Activities will be provided to enhance teaching and learning experiences. Creative writing exercises will be provided.

EPS420 Introduction to Counseling and Psychotherapy
3 credits  Spring Semester
This course is a survey of the theories and practical applications of counseling and psychotherapy. Students will acquire an understanding of a variety of theories of psychotherapy, the basic requirements and skills for effective, ethical counseling, and an appreciation for the role of values and human differences in counseling and psychotherapy. This course does not prepare students for practice in mental health professions.
PREREQUISITE: PSY 110 OR EPS 201; EPS 270 OR EQUIVALENT (PREREQUISITE OR COREQUISITE); SOPHOMORE STANDING OR ABOVE.

EPS422 Foundation of Human service Work and Program Administration
3 credits  Fall Semester
An overview of populations and professional roles in human services and mental health settings. The skills, processes and outcomes for developing and sustaining healthy human services settings are reviewed. Students will learn about prevention, resilience, and multicultural issues and acquire skills for becoming effective workers and leaders in community-based agencies. The course will consist of readings, presentations and role-playing related to social and institutional dynamics.
PREREQUISITE: EPS 201; EPS 311; EPS 321; PREREQUISITE OR COREQUISITE: EPS 361

EPS452 Applied Research and Program Evaluation
3 credits  Spring Semester
This course will cover the scholarly knowledge and skills required to engage in applied community research. Topics will cover applied research theories, practices and designs: quantitative, qualitative, and mixed methods; and program evaluation and needs assessment. Students will learn how to conduct applied research and how to evaluate programs and social interventions in organizations and communities.
PREREQUISITE: EPS 201; EPS 351

EPS462 Community Consultation and Leadership
3 credits  Fall Semester
This course will cover strength based, preventive, empowering approaches to institutional and community change, and will address related skills, stages, processes and outcomes; Conflict resolution, facilitation, strategic planning, visioning, advocacy, change management, and community mobilization will be studied and practiced in class.
PREREQUISITE: EPS 201; EPS 311; EPS 321. PREREQUISITE OR COREQUISITE: EPS 361

EPS470 Listening and Helping Skills.
3 credits  Fall Semester
Listening and Helping Skills is an introductory course to the foundational skills used in helping relationships. Through lectures, discussions and role-plays, students will learn the rationale behind basic helping skills and their application to diverse settings and contexts.
PREREQUISITE: EPS 201 OR PSY 110; EPS 270 OR EQUIVALENT (PREREQUISITE OR CO-REQUISITE); SOPHOMORE STANDING OR ABOVE
EPS471 Human and Social Development Practicum  
3-6 credits  
Spring Semester  
The practicum serves an integrative function: it allows students to apply their academic training, to further develop their career goals, and to hone their skills while gaining experience in real-world settings. Practica are unpaid, supervised experiences. Students choose from a menu of settings that have been approved as HSD practicum sites and spend a minimum of 100 hours (3 credits) or 200 hours (6 credits) at their chosen setting over the course of the semester. Must be taken concurrently with EPS 481.  
PREREQUISITE: EPS 201; EPS 311; EPS 321; EPS 361; EPS 422. CO-REQUISITES: EPS 481; JUNIOR STANDING OR ABOVE.

EPS481 Human and Social Development Practicum Seminar  
3 credits  
Spring Semester  
The practicum seminar brings theory and research to bear on the students' practicum experiences, and provides a forum for further professional skill development and growth. Students will complete a major project integrating their experiences.  
PREREQUISITE: EPS 201; EPS 311; EPS 321; EPS 361; EPS 422. COREQUISITE: EPS 471. JUNIOR STANDING OR ABOVE.

EPS499 INDIVIDUAL STUDY  
1-3 credits  
Fall & Spring Semester & First & Second Summer Session  
Individual work on a special project under faculty guidance.  
PREREQUISITE: PERMISSION OF DIRECTING FACULTY MEMBER AND DEPARTMENT CHAIRMAN.

EPS505 Lifespan Human Development  
3 credits  
Spring Semester  
Theories and research relating to the biophysical, cognitive, and psychosocial domains of human lifespan development.  
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

EPS506 Foundations of Mental Health Counseling  
3 credits  
Offered By Announcement Only  
Students will learn basic concepts and skills for mental health counselors in a multicultural world.  
PREREQUISITE: ADVANCED UNDERGRADUATE OR GRADUATE STANDING.

EPS509 Field Studies in Education  
1-6 credits  
Fall & Spring Semester  
Individual study of a school or school system, identifying its strengths and weaknesses, and making positive recommendations.  
PREREQUISITE: APPROVAL OF ADVISOR.

EPS510 Professional, Legal and Ethical Issues in Counseling  
3 credits  
First Summer Session  
Professional, legal, ethical, and licensing issues in the counseling profession.  
PREREQUISITE: GRADUATE STANDING IN THE COUNSELING PROGRAM.

EPS511 Lifestyle and Career Counseling  
3 credits  
Spring Semester  
An introductory course in career development and career counseling, focusing on theories of career development, counseling tools, strategies, and sociological, economic, and psychological influences on the American worker.  
PREREQUISITE: EPS 513 OR PERMISSION OF INSTRUCTOR.
EPS512 Assessment Strategies for Counselors I
3 credits  
Spring Semester
This course places emphasis on diagnosis, appraisal, assessment, and testing for individual and interpersonal disorders. It addresses statistical procedures and psychometric principles necessary for responsible test use and exposes the student to a variety of test and non-test assessment techniques in marriage and family, and mental health counseling.
PREREQUISITE: GRADUATE STANDING IN COUNSELING PROGRAM.

EPS513 Counseling Process and Practice
3 credits  
Fall Semester
The development of basic communication and clinical skills necessary for establishing the counseling relationship and conducting therapy.
PREREQUISITE: GRADUATE STANDING IN COUNSELING PROGRAM.

EPS514 Psychosocial Bases of Social and Cultural Diversity
3 credits  
Fall Semester
Interrelationship between psychology and sociology in understanding development of diversity in human social systems. Implications for counseling and therapy.
PREREQUISITE: EPS 505 OR EQUIVALENT OR PERMISSION OF INSTRUCTOR.

EPS515 Dynamics of Marriage and Family Systems
3 credits  
Fall Semester
Introduction to the history and development of marriage and family systems theory as a method for understanding individuals' behavior and functioning. Introduction to several modes of family therapy. Throughout the course, lectures will also be integrated with other topics including race, culture, gender, sexual orientation, ability.
PREREQUISITE: GRADUATE STANDING IN COUNSELING PROGRAM OR PERMISSION OF INSTRUCTOR.

EPS526 Counseling in Community Settings
3 credits  
Fall Semester
Exploration of a variety of perspectives on community services relevant to mental health counselors. Topics include: the variety of community settings; community, national, and international diversity in mental health services; diversity of clients (e.g., cultures, religions, GLBT, elderly, social classes, disabilities); mental health funding; the role of politics, policy, advocacy, and research; interviewing across cultures.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

EPS531 Organization Development
3 credits  
Offered By Announcement Only
Techniques, strategies, and models of Organizational Development as they relate to various kinds of institutions. Simulations and actual interventions are stressed.

EPS533 Organization and Administration of Higher Education I
3 credits  
Fall Semester
Theoretical approaches from organizational analysis. Applications to problems, processes, and patterns of higher education institutions. Consideration given to legal status, governance patterns, and external relations. Administrator, faculty, trustee, and student roles are also explored.
EPS534 Theories of Supervision
3 credits
Offered By Announcement Only
Examination of the elements of human behavior involved in successful supervision of instruction. Survey of current supervisory practices in the schools. Consideration of leadership theory.

EPS539 Effective Teaching, Learning, Assessment & Curriculum in Higher Education
3 credits
Fall Semester & Second Summer Session
Provides an overview of current theories, research, and best practices in effective teaching, learning, assessment, and curricular design.
PREREQUISITE: PERMISSION OF INSTRUCTOR

EPS543 The Community College
3 credits
Offered By Announcement Only
An overview of American community colleges including historical evolution, purposes and functions, characteristics of students and faculty, organization and administration, curricula, current issues, and trends.

EPS544 Assessing Learning in the Community College
3 credits
Offered By Announcement Only
Assessment and analysis of learning processes and outcomes in higher education. Formative and summative assessment, data analysis and interpretation are included. Class activities include: lectures, group projects, collaborative learning experiences, reports, participation in assessment strategies, role playing, and demonstration of assessment techniques.

EPS545 Administration of Student Affairs
3 credits
First Summer Session
History and philosophy of student affairs will be addressed as well as principles and organization of student affairs administration, current problems, procedures, and recent developments.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EPS550 Educational Measurement and Evaluation
3 credits
Offered By Announcement Only
Basic principles of measurement as they apply to the construction of teacher-made tests and the selection and use of standardized tests. Attention is also given to the use of measurement instruments in connection with both formative and summative evaluation. Behavioral objectives are considered in the context of criterion-referenced and mastery tests.
PREREQUISITE: TAL 260 OR PERMISSION OF INSTRUCTOR.

EPS553 Introductory Statistics
3 credits
Fall Semester & Second Summer Session
Basic Statistical procedures will be discussed including measures of central tendency, variability and relationship, sampling, and basic tests of statistical significance.

EPS554 Essentials of Research in Social and Behavioral Sciences
3 credits
Fall Semester
Study of the standards methods and techniques of research in the behavioral and social sciences. Brief orientation to quantitative and qualitative procedures used in the analysis and interpretation of research data are emphasized.

EPS558 Community Youth Development
3 credits
First Summer Session
EPS565 Family Therapy with Ethnic Minority Families
3 credits
Offered By Announcement Only
A course in special issues and strategies in family therapy with minority populations focusing on African American and Hispanic clients.
PREREQUISITE: EPS 280 OR 515 OR 612 OR PERMISSION OF INSTRUCTOR.

EPS568 Computer Applications in Educational and Behavioral Science Research
3 credits
Offered By Announcement Only
An introduction to the use of microcomputer statistical packages in social science research, with emphasis given to SPSS for Windows. Course content will cover a broad range of activities encountered in the data analytic process including planning and creating a database, data coding, file manipulation tasks, data screening, and statistical analysis.
PREREQUISITE: EPS 553 OR EQUIVALENT WITH PERMISSION OF INSTRUCTOR.

EPS570 Basic skills in Counseling and Interviewing
3 credits
Spring Semester
Introductory course on essential skills used in counseling and interviewing. Through lectures, discussions, and small group exercises, students will explore their natural style of helping and learn effective listening and communication skills. This course is not intended to train students to become a professional counselor.
PREREQUISITE: ADMISSION IN THE HIGHER EDUCATION PROGRAM OR PERMISSION OF INSTRUCTOR

EPS590 Workshop in Education
1-3 credits
Offered By Announcement Only
Study in special interest areas in education.

EPS591 Workshop in Education
1-3 credits
Offered By Announcement Only
Study in special interest areas in education.

EPS592 Workshop in Education
1-3 credits
Offered By Announcement Only
Study in special interest areas in education.

EPS593 Workshop in Education
3 credits
Fall & Spring Semester
Study in special interest areas in education.

EPS594 Workshop in Education
1-3 credits
Offered By Announcement Only
Study in special interest areas in education.

EPS595 Workshop in Education
3 credits
Fall & Spring Semester
Study in special interest areas in education.

EPS596 Workshop in Education
1-3 credits
Offered By Announcement Only
Study in special interest areas in education.

EPS597 Workshop in Education
1-3 credits
Offered By Announcement Only
Study in special interest areas in education.
EPS598 Workshop in Education
1-3 credits offered by announcement only
Study in special interest areas in education.

EPS599 Workshop in Education
1-3 credits offered by announcement only
Study in special interest areas in education.

KINESIOLOGY & SPORTS SCIENCES
KIN100 Leadership, Management, and Ethics in Sports
3 credits second summer session
Students will gain an understanding of skills and philosophies of leadership, management, and ethic necessary for a position in the sport industry.
PREREQUISITE: SUMMER SCHOLAR STUDENTS ONLY.

KIN105 Introduction to Athletic Training and Sports Medicine
3 credits second summer session
In this practical, hands-on course, the students will learn to identify basic sport injuries that afflict the major joints of the body, and review basic methods to treat these injuries. The student will also learn how nutrition, improper biomechanics, and poor training can all impact sport performance. Plus, participants will be given the opportunity to learn and practice techniques or procedures (such as athletic taping or bracing) that may be useful in minimizing the incidence of injury.

KIN110 Explorations in Sports Medicine
3 credits second summer session
This class will consist of an introduction to the field of Sports Medicine and Exercise Science. Basic information relevant to appropriate exercise prescription, proper nutritional habits, implications on health, longevity and performance will be addressed. Hands-on practical experiences will supplement theoretical concepts learned in the classroom setting.

KIN120 Tennis
2 credits fall & spring semester
Theory, knowledge, skills, and practice in tennis. There is a $25.00 fee for balls, racquets and equipment associated with this class. For credit only.

KIN123 Swimming and Lifeguard Training
2 credits fall & spring semester
Theory and practice in teaching techniques in swimming and professional lifeguarding, including First Aid and CPR. Upon successful completion, students will be eligible for an American Red Cross Lifeguarding Certificate. There is a $60.00 fee associated with this class for American Red Cross Certification, books, and equipment. Credit only.
PREREQUISITE: PASS SWIMMING PRE-TEST. CREDIT ONLY.

KIN124 SCUBA
3 credits fall & spring semester
Basic scuba and open water "I" certification. Includes theory, practical instruction, open water dives, and NAUI certification. For credit only. There is a $65.00 scuba rental fee associated with this class.
PREREQUISITE: KIN 123 (FROMALLY ESS 123) OR EQUIVALENT.
KIN140 Introduction to Athletic Training
2 credits  Fall Semester
The application of athletic training practices in selected clinical education settings. The student must complete 150 hours of documented clinical educational hours, which apply toward the graduation requirement of 1000 hours. Clinical education hours will emphasize emergency procedures, first aid, and protective equipment. Successful completion of the retention process and formal admittance into the clinical portion of the Athletic Training Program.
PREREQUISITE: ATHT MAJORS ONLY. STUDENTS MUST HAVE A SOPHOMORE STATUS.

KIN141 Introduction to Athletic Training Lab
1 credit  Fall Semester
Introduction to clinical athletic training for the first year athletic training major. Hands on experience for the entry level athletic training student. Students will be required to complete a competencies check list with a passing grade. Clinical hours in the athletic training room will give the student the opportunity to use the knowledge, skills, and techniques learned in this course. The student must complete 70 clinical hours which are required for the application process to the Athletic Training Education Program. Student must be additionally enrolled in ESS 140. Fee $65.00 required for Lab.
PREREQUISITE: ATHT MAJORS ONLY. STUDENTS MUST HAVE A SOPHOMORE STATUS.

KIN145 Responding to Emergencies
2 credits  Fall Semester
Students will become familiar with accident, injury, and illness situations, techniques for immediate first aid, and legal parameters involved when administering emergency care. Certification in adult CPR will be obtained. A $40 lab fee will be required for this class.
PREREQUISITE: ATHT MAJORS ONLY. STUDENTS MUST HAVE A SOPHOMORE STATUS.

KIN150 General Nutrition for Health and Performance
3 credits  Fall & Spring Semester
Fundamentals and theories of nutrition with a specific focus on nutrition for both sports and fitness.
PREREQUISITE: FOR NON-SCIENCE MAJORS ONLY

KIN155 Biological Bases for Physical Activity and Health
3 credits  Fall & Spring Semester
This course serves as an introduction to the field of exercise physiology. Students will learn the biological need for physical activity, discuss specific mechanisms on how physical activity reduces disease risk and understand the relationship between physical activity and chronic diseases such as coronary heart disease, obesity, diabetes, cancer, aging and mental health.

KIN156 Laboratory Applications to Exercise Physiology
1 credit  Fall Semester
This laboratory will incorporate clinical testing for fitness evaluations, strength assessment, and risk assessment. Students will have the opportunity to perform hands-on testing and assessment using sophisticated laboratory equipment with guidance for analysis and interpretation of results.
PREREQUISITE: KIN 155 (FORMALLY ESS 155).
KIN184 Athletic and Sport Injuries
3 credits  Fall & Spring Semester
Athletic injuries in sports that occur over the principal joints in the body and the inclusion of anatomical structures that are frequently damaged. Operational treatments and rehabilitation program after surgery.

KIN200 Survey of Sports Administration
3 credits  Second Summer Session
Students will examine the employment opportunities and skills needed in professional, collegiate, and amateur sports as well as the health and fitness industry.
PREREQUISITE: SUMMER SCHOLAR STUDENTS ONLY.

KIN201 Introduction to Sport Administration
3 credits  Fall & Spring Semester & First & Second Summer Session
Basic overview of the fields of sport management. Majors must receive a grade of B- or higher.

KIN202 Applied Nutrition for Health and Performance
3 credits  Fall & Spring Semester
The study of nutrition, diet analysis, biochemical processes in energy metabolism, nutrition and health problems, and nutrition as it relates to physical performance. The class will have 3 sections: 1) nutritional links to chronic disease; 2) nutrition before, during and after exercise bout; and 3) nutritional supplements for health and performance.

KIN203 Introduction to Gaming and Casino Management
3 credits  Fall & Spring Semester

KIN204 Sports Personnel/ Career Management
3 credits  Fall & Spring Semester
This course will expose students to the employment opportunities in the sport industry through the following modalities: Lecture, videos, speakers and visitation. Students will also learn the techniques of resume writing and the job interview.
PREREQUISITE: OPEN ONLY TO SPAD MAJORS AND MINORS. MUST HAVE TAKEN KIN 201 (FORMALLY ESS 201) AND EARNED A C+ OR BETTER.

KIN206 Sport Facilities and Event Management
3 credits  Fall & Spring Semester
This course is an overview of the policy and procedures necessary to organize and develop sport events and facilities. In depth review of all programs, functions and procedures necessary for the operation of events and facilities are examined.
PREREQUISITE: MUST HAVE TAKEN KIN 201 (FORMALLY ESS 201) AND EARNED A C+ OR BETTER.

KIN210 Foundations in Athletic Training
2 credits  Spring Semester
Introduction to Sports Medicine/Athletic Training with emphasis on study of the sports medicine team, legal concerns, nutrition, and pre-participation physicals. Course will discuss the basic principles of injury prevention including the role of conditioning, equipment, and protective padding. Additionally, students will be introduced to the study of etiology and mechanisms of injury, pathology, and recognition of clinical signs and symptoms of athletic injury. The student must complete 50 clinical observation hours, which are required for the retention process of the Athletic Training Education Program. Prerequisites: Must have sophomore status.
PREREQUISITE: MUST HAVE SOPHOMORE STATUS.
KIN212 Elements of Sports Psychology
3 credits                                    Fall & Spring Semester
Introduction to the field of sport and exercise psychology by examination of psychological theories and research related to sport and exercise behavior.

KIN221 Exercise Physiology
3 credits                                    Fall & Spring Semester & First & Second Summer Session
This course discusses the structure and function of human skeletal muscle as a biological machine, biological energy systems as they function during exercise, fatigue and recovery, the contractile process in skeletal muscle, and the specific changes resulting from variations in the training stimulus. Majors must receive a grade of B- or higher.
PREREQUISITE: RECOMMENDED: KIN 202, KIN 233, KIN 234, KIN 246, OR ONE SEMESTER OF ANATOMY IS REQUIRED.

KIN222 Exercise Physiology Laboratory: Neuromuscular
2 credits                                     Fall Semester
This course examines the nature of data collection in exercise physiology. Students will receive information on collection theory and its application to the measurement of a number of physiological systems during exercise. The course is designed to establish a clear linkage between the chronic and acute changes that occur during exercise and the laboratory methods that are used to assess those changes. Co-requisite: ESS 221.

KIN230 Medical Terminology and Documentation
1 credit                                        Fall & Spring Semester
Terminology, note writing, and documentation techniques in sports medicine. A treatment cycle model will be introduced.
PREREQUISITE: OPEN ONLY TO ATHT MAJORS. MUST HAVE COMPLETED KIN 140 AND 141 (FORMALLY ESS 140 AND 141) AND EARNED A GRADE OF B OR BETTER FOR BOTH COURSES.

KIN232 Basic Human Physiology
3 credits                                    Fall & Spring Semester & First & Second Summer Session
This course presents a general overview of the major systems of the human organism with an examination of how they function in the human body. Majors must receive a grade of B- or higher.

KIN233 Basic Anatomy Lab
2 credits                                     Fall Semester
This course presents a general overview of the anatomy of the major body systems, such as the skeletal, muscular, cardiovascular, nervous, digestive, respiratory and reproductive systems as well as the integumentary system and special senses.

KIN234 Functional Human Anatomy
3 credits                                    Fall & Spring Semester
The study of human anatomy specifically for the sports medicine practitioner

KIN235 Personal and Community Health
2 credits                                    Fall Semester
Overview of current strategies and practices for healthy living, including health maintenance and disease prevention.
PREREQUISITE: OPEN ONLY TO ATHT MAJORS. MUST HAVE COMPLETED KIN 140 AND 141 (FORMALLY ESS 140 AND 141) AND EARNED A GRADE OF B OR BETTER FOR BOTH COURSES.
KIN246 Gross Anatomy for Kinesiology and Sport Sciences
3 credits  Fall & Spring Semester
Human dissection of the major muscles, arteries and nerves of the body. Course is held at the University of Miami cadaver laboratory. There is a $100.00 lab fee associated with this class.
PREREQUISITE: Human Anatomy

KIN250 Orthopedic Assessment: Lower Extremity
3 credits  Fall Semester
Common types of orthopedic/sports dysfunctions to lower extremity will be discussed. Injuries will be discussed from the following viewpoints: etiology and mechanism of injury, pathology, recognition and valuation techniques, protocols, and prevention. Co requisite: ESS 251.
PREREQUISITE: ATHT MAJORS ONLY. STUDENTS MUST HAVE SOPHOMORE STATUS. MUST HAVE COMPLETED KIN 140 AND 141 (FORMALLY ESS 140 AND 141) AND EARNED A GRADE OF B OR BETTER IN BOTH COURSES. COREQUISITE: KIN 251 (FORMALLY ESS 251).

KIN251 Orthopedic Assessment: Lower Extremity Lab
1 credit  Fall Semester
Techniques used to evaluate orthopedic and sports injuries occurring to the lower extremity. The student must complete 100 clinical education hours, which apply toward the graduation requirement of 1000 hours. Clinical education hours will emphasize lower extremity orthopedic assessment, goniometry, manual muscle testing techniques, and gait evaluations. Students must be additionally enrolled in ESS 250.
PREREQUISITE: ATHT MAJORS ONLY.

KIN260 Orthopedic Assessment: Upper Extremity
3 credits  Offered By Announcement Only
Common types of orthopedic/sports dysfunctions to the upper extremity will be discussed. Injuries will be discussed from the following viewpoints: etiology and mechanism of injury, pathology, recognition and evaluation techniques, protocols, and prevention. Co requisite: ESS 261.
PREREQUISITE: ESS 246. OPEN ONLY TO ATHT MAJORS. MUST HAVE COMPLETED ESS 140 AND 141 AND EARNED A GRADE OF B OR BETTER FOR BOTH. COREQUISITE: ESS 261.

KIN261 Orthopedic Assessment: Upper Extremity Lab
1 credit  Spring Semester
Techniques used to evaluate orthopedic and sports injuries occurring to the upper extremity. The student must complete 100 clinical education hours, which apply toward the graduation requirement of 1000 hours. Clinical education hours will emphasize upper extremity orthopedic assessment, goniometry, and manual muscle testing techniques. Students must be additionally enrolled in ESS 260.
PREREQUISITE: NONE. CO-REQUISITE: ESS 260

KIN264 General Medical Conditions Evaluation
1 credit  Fall Semester
This class is the study of the clinical signs and symptoms of General Medical conditions that will present to the Certified Athletic Trainer. Emphasis will be placed on the techniques and instrumentation used for performing appropriate evaluation procedures.
PREREQUISITE: ATHLETIC TRAINING MAJORS ONLY. ESS 235, 245, 246.
KIN301 Athletic Injuries & Sport First Aid
3 credits                                                        Spring Semester
Course will help coaches, camp counselors, teachers, personal trainers, and athletes of all levels to fulfill the role of being a competent first responder to athletic injuries and illnesses. Upon completion of this course, students will have knowledge of basic sport first aid skills, anatomy and sport injury terminology, and knowledge of specific athletic injuries and illnesses. These will include head injuries, sudden illnesses, weather-related problems, upper and lower body musculoskeletal injuries, respiratory emergencies and illnesses, and internal injuries. Students will also learn basic hands-on skills such as splinting, taping, and bracing as it relates to preventing and treating athletic injuries.

KIN302 SPORT MARKETING
3 credits                                                    Fall & Spring Semester
This course is designed as a marketing course that deals exclusively with Sport Marketing. Students are expected to develop comprehensive marketing and sponsorship plans. This course will require moderate to heavy computer knowledge. This course is designed to maximize the practical applications of marketing theory to the sport business environment.
PREREQUISITE: MUST HAVE TAKEN KIN 201 (FORMALLY ESS 201) AND EARNED A C+ OR BETTER

KIN306 Essential Leadership in Sports and the Professions
3 credits                                                    Fall & Spring Semester
A variety of leadership and management skills will be examined, including communication, problem solving, conflict management, group dynamics, and leadership theory. Practical application to sport and allied professions will be included. Self-assessment opportunities and exercises will be utilized. Open to majors only.
PREREQUISITE: OPEN TO SPORTS ADMINISTRATION MAJORS ONLY WITH JUNIOR OR HIGHER STANDING

KIN308 Ethical Decision Making in Sport and the Professions
3 credits                                             Fall & Spring Semester & First & Second Summer Session
This course will examine ethical dilemmas in decision-making and other contemporary issues in sports management and campus and community environment. Real and hypothetical situations will be utilized.
PREREQUISITE: OPEN TO SPORT ADMINISTRATION MAJORS ONLY WITH JUNIOR OR HIGHER STANDING

KIN310 Adolescent Growth and Maturation
3 credits                                                        Fall & Spring Semester
This course is an in-depth study of pediatric exercise physiology with special emphasis on growth, maturation, physical activity, and performance. Topics include a comprehensive summary of biological growth and maturation processes that impact physical performance. Additionally, students will learn the basis of training pediatric populations.

KIN317 Sports Sales and Promotion
3 credits                                             Fall & Spring Semester & First & Second Summer Session
This course is designed to introduce students to various sales and promotional tactics utilized in the sport industry. The course will focus on items which generate revenue for sport organizations including event tickets, merchandise, concessions, advertising and corporate sponsorship and hospitality. Students will have the opportunity to develop pricing structures, sales plans, and proposals and participate in negotiations as it relates to these various items.
KIN321 Introduction to Systemic Exercise Physiology
3 credits  Spring Semester
The structure, function, and training of the cardio respiratory system. Special emphasis on structural changes in the systems with exercise and their influence on cardiovascular performance, body composition, exercise efficiency and health.
PREREQUISITE: KIN 221 OR PERMISSION OF THE INSTRUCTOR.

KIN322 Exercise Physiology Laboratory: Cardio respiratory
2 credits  Spring Semester
This course concentrates on collection of cardio respiratory data. In addition, the application of these data to exercise prescription for specific athletic and non-athletic populations will be covered. Co requisite: ESS 321.

KIN340 Strength and Conditioning
3 credits  Fall Semester
Introduction to Sport Specific Strength Training. Students will learn the practice of Olympic Weight Lifting and related exercise techniques.
PREREQUISITE: KIN 221

KIN345 Kinesiology
3 credits  Fall & Spring Semester
Study of the structure and function of the skeletal, joint, and muscular systems. Emphasis is placed on the mechanics of the movement of the human body and its relationship to sport and physical performance.

KIN365 Principles of Exercise Prescription: Cardiovascular
3 credits  Spring Semester
This class is the study of the theory and principles behind the development of exercise programs. Students will learn how to accurately evaluate and develop individual exercise prescription based upon sound scientific research. Exercise prescriptions will be developed in accordance with the guidelines set forth by the National Strength and Conditioning Association and the American College of Sports Medicine.
PREREQUISITE: KIN 233, KIN 234, KIN 246, OR ONE SEMESTER OF ANATOMY IS REQUIRED

KIN366 Exercise Physiology Laboratory: Assessment
3 credits  Fall & Spring Semester
This lab course is designed to complement the ESS 365 lecture course (Principles of Exercise Prescription): Cardiovascular. Students will apply practical field assessments for body composition, aerobic capacity, muscular fitness, and joint range of motion, and will employ exercise strategies to improve each of the assessed fitness components. Students will also prescribe exercises to improve performance-based fitness, such as coordination, balance, agility, speed and power while learning proper exercise training techniques. Must be a declared Exercise Physiology (EXPH) major and receive a grade of "C" or better to satisfy requirements.

KIN401 Legal Aspects of Sport
3 credits  Fall & Spring Semester & First & Second Summer Session
This course will focus on legal issues applicable to sport administration, including tort law, risk management, negligence, and constitutional law. Relevant legal cases and concepts will be incorporated.
PREREQUISITE: OPEN TO MAJORS AND MINORS ONLY.

KIN402 Sport Sponsorship and Promotion
1-3 credits  First Summer Session
KIN403 Sport Information Management  
3 credits  
Fall Semester  
This course centers upon the development of those skills that are necessary for Sport Information Directors. Specifically, these traditionally include marketing, media, promotion, and public relations. This course hopes to provide detailed knowledge to allow the student to participate in these activities in a professional manner.  
PREREQUISITE: MUST HAVE TAKEN ESS 201 AND EARNED A C+ OR BETTER.

KIN405 Finance and Budget in Sport Administration  
3 credits  
Fall Semester  
This course seeks to develop those financial skills necessary to understand a wide variety of financial concepts that impact sport managers. Such topics would include but not be limited to: Sport franchise value/valuations; economic impact of sport; risk-return models; financial statement analysis, and budgeting.  
PREREQUISITE: MUST HAVE TAKEN ESS 201 AND EARNED A C+ OR BETTER.

KIN410 Problems and Issues in Sport Administration  
3 credits  
Fall Semester  
This course is designed as a seminar course. Topical issues in high school, collegiate and professional sport are presented and discussed in detail. A number of student-centered activities are introduced to aid in the development of the student.  
PREREQUISITE: SPAD MAJORS ONLY. SENIOR STANDING.

KIN412 Psychophysicsology  
3 credits  
Fall & Spring Semester & First & Second Summer Session  
The study of the physiological effects of acute vs. chronic training on homeostatic function, musculoskeletal systems, energy system function, cardiovascular system, and the pulmonary system. Students will be able to understand and interpret terminology and research literature published in the field.

KIN421 Advanced Systemic Exercise Physiology  
0-3 credits  
Spring Semester  
This course examines the short and long term physical responses to exercise and provides a general overview of the field of exercise physiology with reference to the latest trends in modern physiological research.  
PREREQUISITE: KIN 321, KIN 246

KIN431 Laboratory Experiences in Systemic Exercise Physiology  
2 credits  
Fall & Spring Semester  
This class will present laboratory experiences relevant to theory and exercise physiology information presented in class. The laboratory experiences will sequentially follow lecture material presented in the classroom. Co requisite: ESS 421.  
PREREQUISITE: KIN 321, KIN 246

KIN435 Clinical Biomechanics for Sport Medicine Professionals.  
3 credits  
Fall Semester & First Summer Session  
A lecture course stressing biomechanical of joints and pathomechanics of orthopedic injuries.  
PREREQUISITE: ESS 245 OR ESS 488 KINESIOLOGY.
KIN443 Clinical Athletic Training Lab I  
2 credits  
Fall & Spring Semester  
The application of athletic training practices in selected clinical education settings.  
The student must complete 150 hours of documented clinical education hours, which  
apply toward the graduation requirement of 1000 hours. Clinical education hours  
will emphasize emergency procedures, first aid, and protective equipment. Successful  
completion of the retention process and formal admittance into the clinical portion  
of the Athletic Training Program.  
PREREQUISITE: SUCCESSFUL COMPLETION OF THE RETENTION PROCESS AND FORMAL ADMITTANCE  
INTO THE CLINICAL PORTION OF THE ATHLETIC TRAINING EDUCATIONAL PROGRAM.

KIN444 Clinical Athletic Training Lab II  
2 credits  
Spring Semester  
The application of athletic training practices in selected clinical and educational  
settings. The student must complete 150 hours of documented clinical education  
hours, which apply toward the graduation requirement of 1000 hours. Clinical  
education hours will emphasize general medical conditions, nutritional issues,  
psychosocial intervention, and injury prevention and risk management. Prerequisite:  
A grade of "B" or better in KIN 443 (Formally ESS 443).  
PREREQUISITE: A GRADE OF "B" OR BETTER IN KIN 443 (FORMALLY ESS 443).

KIN455 Clinical Athletic Training Lab III  
2 credits  
Fall Semester  
The application of athletic training practices in selected clinical and educational  
settings. The student must complete 180 hours of documented clinical education  
hours, which apply toward graduation requirement of 1000 hours. Clinical education  
hours will emphasize acute care of injuries and illnesses, lower extremity orthopedic  
assessment, and risk management and injury prevention. Prerequisite: A grade of  
"B" or better in KIN 443 and KIN 444 (formally ESS 443 and ESS 444).  
PREREQUISITE: A GRADE OF "B" OR BETTER IN KIN 443 AND KIN 444 (FORMALLY ESS 443  
AND ESS 444).

KIN456 Clinical Athletic Training Lab IV  
2 credits  
Spring Semester  
The application of athletic training practices in selected clinical and educational  
settings. The student must complete 180 hours of documented clinical education  
hours, which apply toward the graduation requirement of 1000 hours. Clinical  
education hours will emphasize upper extremity orthopedic assessment, conditioning  
and rehabilitation, and therapeutic and therapeutic modalities. Prerequisite:  
A grade of "B" or better in KIN 140, KIN 141, KIN 443, KIN 444, KIN 455 (formally  
ESS 140, ESS 141, ESS 443, ESS 444, ESS 455).  
PREREQUISITE: A GRADE "B" OR BETTER IN KIN 140, KIN 141, KIN 443, KIN 444, KIN  
455 (FORMALLY ESS 140, ESS 141, ESS 443, ESS 444, ESS 455).

KIN457 Practicum in Kinesiology and Sport Sciences  
1- 3 credits  
Fall & Spring Semester & First & Second Summer Session  
A comprehensive program of observation and supervised experience under the direction  
of a professional in the field for one semester. Supervised by University faculty.  
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRPERSON.
KIN 458 Practicum in Kinesiology and Sport Sciences  
3 credits 
Fall & Spring Semester  
A comprehensive program of supervised experience conducted under the direction of a professional in the field. Must culminate in research or hands-on experience conducted in the exercise science field.  
PREREQUISITE: KIN 221, 321. OPEN TO ALL HONORS PROGRAM STUDENTS OR OTHER STUDENTS RECEIVING SPECIAL PERMISSION OF THE INSTRUCTOR (FORMALLY ESS221, 321).

KIN 461 Therapeutic Modalities  
2 credits 
Fall Semester  
Students will acquire the theoretical knowledge necessary for the clinical application of therapeutic modalities. Principles of electrophysics and biophysics, specific physiological effects and therapeutic indications and contraindications associated with cyotherapy, paraffin, ultrasound, electrotherapeutic and hydrotherapeutic modalities, intermittent compression, message, and other contemporary modalities will be discussed. Prerequisite: Open only to ATHT majors. Must have completed KIN 140 and 141 and earned a grade of B or better for both courses, Co requisite: KIN 462 (Formally ESS 140 and 141 and ESS 462).

KIN 462 Therapeutic Modalities Laboratory  
1 credit 
Fall & Spring Semester & First & Second Summer Session  
This laboratory will help students apply the techniques and clinical skills related to the application of therapeutic modalities. Clinical education hours will give the student the opportunity to use the knowledge, skills, and techniques learned in this course. Students must complete 40 hours of documented clinical education hours, which apply toward the graduation requirement of 1000 hours. Students must be additionally enrolled in KIN 461 (Formally ESS 461).

KIN 463 Therapeutic Rehabilitation  
2 credits 
Spring Semester  
This course enables students to acquire the theoretical knowledge for the clinical application of a rehabilitation program, physical examination, principles of therapeutic exercise, open and closed chain exercise, muscle re-education, and special therapeutic techniques such as aquatic therapy.  
PREREQUISITE: OPEN ONLY TO ATHT MAJORS. MUST HAVE COMPLETED KIN 140 AND KIN 141 AND EARNED A GRADE OF B OR BETTER FOR BOTH COURSES (FORMALLY ESS 140 AND ESS 141).

KIN 464 Therapeutic Rehabilitation Laboratory  
1 credit 
Fall Semester  
This laboratory will place emphasis on the techniques and clinical skills relating to the rehabilitation of athletic injuries. Clinical education hours in a therapeutic rehabilitation facility will give the students the opportunity to use the knowledge, skills, and techniques learned in this course. The student must complete 100 hours of documented clinical education hours, which apply toward the clinical education requirement for graduation. Students must be additionally enrolled in KIN 463 (Formally ESS 463).  
PREREQUISITE: STUDENTS MUST BE ADDITIONALLY ENROLLED IN KIN 463 (FORMALLY ESS 463).
KIN465 Pharmacology  
**2 credits**  
*Fall Semester*  
Introduction to the basic principles of pharmaceutical intervention and the implications for rehabilitation as related to the Certified Athletic Trainer.  
PREREQUISITE: KIN 210, 230, 264 (FORMALLY ESS 210, 230, 264) OPEN ONLY TO ATHT MAJORS. MUST HAVE COMPLETED KIN 140 AND 141 (FORMALLY ESS 140 AND 141) AND EARNED A GRADE OF B OR BETTER FOR BOTH COURSES.

KIN466 Neuromuscular Basis for Training  
**3 credits**  
*Spring Semester*  
The study of specific techniques to enhance neuromuscular performance in sport and everyday activity. Students will examine current training strategies and understand their strengths and weaknesses as applied to specific populations.  
PREREQUISITE: EXPH MAJORS ONLY.

KIN470 Administrative Aspects of Athletic Training  
**2 credits**  
*Fall Semester*  
Basic concepts of legal liability, budget, financial management, inventory control, facilities design and maintenance will be addressed. Additionally, the student will discuss the day to day supervision, scheduling and general administration of the athletic training room. Open only to ATHT majors. Must have completed KIN 140 and 141 and earned a grade of B or better for both courses (Formally ESS 140 and ESS 141).  
PREREQUISITE: ATHT MAJORS ONLY. STUDENTS MUST HAVE SOPHOMORE STATUS.

KIN473 Sports Governance  
**3 credits**  
*Fall Semester*  
This course provides the students with an examination of the governing organizations of sport at the youth, secondary, intercollegiate, professional, international, sport specific and Olympic levels. In addition, policy development in sport management will be explored.

KIN475 Organization and Administration of Athletic Training  
**3 credits**  
*Fall Semester*  
Basic concepts of legal liability, budget, financial management, inventory control, facilities design and maintenance will be addressed. Additionally, the student will discuss the day to day supervision, scheduling and general administration of the athletic training room.  
PREREQUISITE: OPEN ONLY TO ATHT MAJORS. MUST HAVE COMPLETED KIN 140 AND 141 AND EARNED A GRADE OF B OR BETTER FOR BOTH COURSES (FORMALLY ESS 140 AND ESS 141).

KIN476 Seminar in Athletic Training  
**2 credits**  
*Fall Semester*  
Topics in Athletic Training with discussions covering the NATA competencies and objectives in written and oral practical formats.  
PREREQUISITE: PERMISSION OF THE INSTRUCTOR. ATHLETIC TRAINING MAJORS ONLY. OPEN ONLY TO ATHT MAJORS. MUST HAVE COMPLETED KIN 140 AND 141 AND EARNED A GRADE OF B OR BETTER FOR BOTH COURSES (FORMALLY ESS 140 AND ESS 141).
KIN477 Advanced Nutrition for Health and Fitness  
3 credits Fall & Spring Semester & First & Second Summer Session  
This course is an in-depth study of nutritional concerns of today's athlete. From dehydration to classic carbohydrate loading and from the Female Athlete Triad to ergogenic aids in sports, this course provides state of the art information on the latest nutritional issues for the exercising individual and for the athlete. 
PREREQUISITE: KIN 202

KIN478 Laboratory Experiences in Nutrition  
2 credits Spring Semester  
Students will learn how to calculate hydration needs for various sports, electrolyte concentrations of various commercial drinks, classic carbohydrate menus for endurance activities. Students will learn how to enter and interpret dietary food logs and records using computerized dietary analysis systems. Students will also learn more about energy density composition of various foods so that menu plans and dietary plans can be better understood. Co requisite: KIN 477 (Formally ESS 477). 

KIN480 The Scientific Bases for Training Prescription: Neuromuscular  
3 credits Fall & Spring Semester  
An examination of the scientific bases of modern training techniques designed to optimize performance, their functional application and potential impact on performance in sport and everyday activity. 
PREREQUISITE: ESS 221

KIN488 Gross Anatomy  
3 credits Fall & Spring Semester & First & Second Summer Session  
The essentials of Myology, Osteology, and Arthrology. Major nerves and arteries are also dissected. Many of the dissection areas are injury sites in sports such as the knee, shoulder, elbow, neck, and spinal nerves. There is a laboratory fee requirement for this course ($100.00). 
PREREQUISITE: OPEN TO EXPH AND ATHT MAJORS ONLY.

KIN490 Special Topics in Kinesiology and Sport Sciences  
3 credits Fall & Spring Semester  
This course is designed for students wishing to focus on a specific area of study within the umbrella of the field of Kinesiology. Students will be given supervision and support in a direction relevant to their needs and interests in a structured setting. 
PREREQUISITE: MUST HAVE TAKEN KIN 201 AND EARNED A C+ OR BETTER (FORMALLY ESS 201).

KIN495 Individual Study  
1- 3 credits Fall & Spring Semester & First Summer Session  
The Application for Admission to Advanced Individual Study Form will be required. 
PREREQUISITE: APPLICATION FOR ADMISSION TO ADVANCED INDIVIDUAL STUDY FORM REQUIRED.

KIN496 Individual Study  
1- 3 credits Fall & Spring Semester & Second Summer Session  
The Application for Admission to Advanced Individual Study Form will be required. 
PREREQUISITE: APPLICATION FOR ADMISSION TO ADVANCED INDIVIDUAL STUDY FORM REQUIRED.
KIN497 Internship in Sport Administration
1-9 credits  
Fall Semester
KIN 497: Internship in Sport Administration Filed Experience that requires the student to participate in the work environment (Formally ESS 497).
PREREQUISITE: KIN 201. MUST HAVE EARNED A GRADE OF C OR BETTER IN KIN 201 (FORMALLY ESS 201). SENIOR STANDING. OPEN ONLY TO SPAD MAJORS.

KIN498 Seminar in Sport Administration
3 credits  
Spring Semester
Professional seminar to accompany internship in sport administration. Students will be required to interact with other internship students and supervisors on a regular basis and additionally, students will be required to submit comprehensive reports regarding their internship experiences.
PREREQUISITE: SENIOR STANDING. OPEN ONLY TO SPAD MAJORS. MUST HAVE TAKEN KIN 201 AND EARNED A C+ OR BETTER (FORMALLY ESS 201).

KIN502 Sport Sponsorship and Promotion
1-3 credits  
First Summer Session

KIN515 Nutrition Diet and Exercise
3 credits  
First Summer Session
Students will learn the latest concepts in weight management, physical fitness, and healthy eating. They will be able to understand the complex interplay of carbohydrates, protein, fat, water, fiber, vitamins, and minerals in the nourishment of their body and overall well-being. They will also examine serious health issues such as the use/misuse of anabolic steroids, weight control, and eating disorders.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

KIN520 Cellular Exercise Physiology
3 credits  
Spring Semester
The course examines Bioenergetics and Muscular Physiology in training and detraining. Topics include the energy systems and their functional application during exercise, muscle structure and function, cellular and sub-cellular modifications of organelles and contractile mechanisms as result of training and physiological bases of training techniques.

KIN521 Systemic Exercise Physiology
0-3 credits  
Fall Semester
The study of the physiological effects of acute vs. chronic training on homeostatic function, musculoskeletal systems, energy system function, cardiovascular and the pulmonary systems. Students will be able to understand and interpret terminology and research literature published in the field.
PREREQUISITE: ONE YEAR OF UNDERGRADUATE CHEMISTRY AND ONE YEAR OF UNDERGRADUATE HUMAN BIOLOGY.

KIN522 Basic Statistics in Kinesiology and Sport Sciences
3 credits  
Fall Semester & First & Second Summer Session
Introduction to basic statistical techniques commonly used in the Exercise and Sport Sciences. Designed as a prerequisite for KIN 646 (Formally ESS 646).
KIN523 Athletic Training Techniques - Assessment
3 credits  Fall Semester
This course will introduce the basic concepts related to injury evaluation. With this information, and with the development of basic skills, the student should be able to form an impression of the nature of most musculoskeletal injuries.
PREREQUISITE: KIN 525 AND 588 (FORMALLY ESS 525 AND ESS 588).

KIN524 Athletic Training Techniques - Rehabilitation
3 credits  Fall Semester
This course will introduce theoretical concepts that must be understood in order to be able to rehabilitate a musculoskeletal injury. Regarding actual rehabilitation techniques, the emphasis will be on therapeutic exercise with only a brief introduction to therapeutic modalities.
PREREQUISITE: KIN 525 AND 588 (FORMALLY ESS 525 AND ESS 588).

KIN525 Advanced Kinesiology
3 credits  Fall & Spring Semester
In-depth study of the human skeletal and muscular systems with a focus on the mechanics of movement as related to physical activity, sports, and athletics.
PREREQUISITE: ESS 245 OR PERMISSION OF INSTRUCTOR.

KIN527 Community and Global Nutrition
3 credits  Fall & Spring Semester
This course is designed to provide an overview of nutritional issues & related aspects of infectious and chronic disease impacting the health and performance of athletes, individuals & groups domestically & globally. Economic and environmental issues which impact nutritional status and deficiency in the Western societies & third world countries will be addressed. An international and cultural perspective on food, eating behaviors and customs will be explored.

KIN530 Laboratory Techniques in Functional Evaluation of Skeletal Muscle
3 credits  Spring Semester
This course examines the theories of data collection and collection techniques used to evaluate musculo-skeletal and neuromuscular function. The application of both computerized and non-computerized collection systems for performance evaluation is covered. The course is also designed to establish a clear linkage between the acute and chronic musculo-skeletal and neuromuscular changes that occur during exercise and the laboratory methods used to assess those changes. Collection theory, musculoskeletal and neuromuscular function, methods of strength evaluation, anaerobic power testing, electromyography, and a number of other functional parameters will be discussed.
PREREQUISITE: KIN 520 (FORMALLY ESS 520).

KIN531 Laboratory Experiences in Systemic Exercise Physiology
3 credits  Fall Semester
This course provides a laboratory assessment of physiological principles and theories learned in the classroom setting. Focus will be on systemic application to exercise as an acute or chronic stressor. Co requisite: ESS 521.
PREREQUISITE: COREQUISITE ESS 521

KIN532 Sports Injuries: Prevention and Treatment
3 credits  Fall & Spring Semester
Prevention, diagnosis, treatment and rehabilitation of sports injuries. Anatomical and Kinesiological application to sports injuries.
KIN534 Integrative & Functional Medicine
3 credits Fall Semester
This course will discuss integrative and functional medicine and how it emerged.
This course will analyze the healthcare models that include personalized care and
the whole-person perspective. In this course we will discuss various factors that
influence disease including diet and nutrition, stress, activity level, pharmaceuticals
and environmental pollutants. Alternative approaches to treatment will also be
discussed.

KIN535 Clinical Biomechanics for Sport Medicine Professionals
3 credits Fall Semester & First Summer Session
A lecture course stressing biomechanics of joints and pathomechanics of orthopedic
injuries.
PREREQUISITE: ESS 245 OR ESS 488 KINESIOLOGY

KIN536 Strength and Conditioning I
3 credits Fall & Spring Semester
This course serves as the practical/technical foundation for major compound movements
and Olympic lifts. It also provides comprehension of movement specific dynamic
warm-ups, advanced stretching techniques, methods for identifying movement compensations
and underlying issues as well as evaluating Olympic techniques. Due to the practical
nature of the course, all the sections of this course are held in the Hecht Athletic
Center (HAC).

KIN537 Strength and Conditioning II
3 credits Fall & Spring Semester
This course is the continuation of Strength and Conditioning I (KIN 536). It provides
more advanced Olympic weightlifting techniques and ballistic training, alongside
a continued focus on corrective exercises to ensure a reduced risk of injury.
The course also provides an introduction to exercise programming including specialized
training techniques for athletic development. Due to the practical nature of the
course, all sections of this course are held in the Hecht Athletic Center (HAC).
PREREQUISITE: KIN 536

KIN538 Nutrition during the Lifecycle
3 credits Fall Semester
This course is designed to examine the changes in nutrition requirements during
the life cycle, particularly as related to growth, development and aging. Psychosocial,
cultural, and economic issues related to food intake at various life stages will
be reviewed.
PREREQUISITE: AN INTRODUCTORY NUTRITION COURSE THAT INCLUDED DIGESTION, ABSORPTIONS
AND TRANSPORT OF NUTRIENTS, MACRO AND MICRONUTRIENTS AND ENERGY METABOLIS
IS REQUIRED.

KIN540 Exercise Psychobiology
3 credits Fall & Spring Semester
This course is designed primarily for graduate level Exercise and Sport science
students who are interested in the biochemical basis of personality as affected
by exercise and sport. The course involves interdisciplinary integration and comprehensive
reviews of ancient and current literature dealing with exercise, stress, emotional,
personality, immune system function and neuroendocrine function.
PREREQUISITE: KIN 521 (FORMALLY ESS 521).
KIN542 STRENGTH AND CONDITIONING
3 credits Fall & Spring Semester
A comprehensive overview of strength and conditioning.
PREREQUISITE: ESS245 OR KIN 345 - KINESIOLOGY (FORMALLY ESS 345).

KIN543 Professional Training and Counseling for Integrative Health
3 credits Fall Semester
Students will learn the integrative health care model, theories, behavior change models, approaches & techniques used in nutritional counseling to help athletes, individuals and groups implement and sustain behaviors, lifestyles, and attitudes to achieve optimal health. Lecture & personal application will allow for the development of skills in each of these areas.
PREREQUISITE: PRE-OR CO-REQUISITE: NUTRITION ASSESSMENT & LAB OR PERMISSION OF INSTRUCTOR

KIN545 Special Sport Populations
3 credits Spring Semester
This course presents an in-depth examination of chronic conditions and medical problems commonly observed in athletes. Students will learn about the etiology of the medical condition, how exercise affects the condition, and the most recent therapeutic treatments prescribed for the condition.
PREREQUISITE: KIN 521 (FORMALLY ESS 521).

KIN546 Elite Conditioning I
3 credits Fall & Spring Semester
Elite Conditioning I provides an introduction to evaluation techniques catered specifically to the athletic population including tests for strength, power, speed, agility, balance and stability. The course also provides instruction on how to apply these evaluations to their respective sports/positions. These evaluation techniques provide data that students will use in the process of corrective exercise prescription. Students are taught how to implement corrective strategies to improve athletic performance. Due to the practical nature of the course, all sections of this course are held in the Hecht Athletic Center (HAC).

KIN547 Elite Conditioning II
3 credits Fall & Spring Semester
Elite Conditioning II is the continuation of Elite Conditioning I (KIN 546). This course provides students with an understanding of the design and implementation of periodized conditioning programs for athletes based on the testing, evaluation, and applications to specific sports learned in Elite Conditioning I. The course focuses on speed agility and quickness for sports. It also includes practical implementation of ballistic, plyometric, speed, and conditioning drills emphasizing evidence based methods and training techniques. Due to the practical nature of the course, all sections of this course are held in Hecht Athletic Center (HAC).
PREREQUISITE: KIN 546

KIN549 Nutrition Assessment and Lab
3 credits Fall Semester
Application of the principles of normal and therapeutic nutrition, nutrition assessment, evaluation and intervention as related to sports performance and the management and treatment of disease states. Laboratories will allow for the development of skills in each of these areas.
PREREQUISITE: STUDENTS ARE EXPECTED TO BE FAMILIAR WITH BASIC PRINCIPLES OF NUTRITION, HAVE COMPLETED BIOCHEMISTRY, DIET THERAPY, AND PSYCHOLOGY OR RECEIVE PERMISSION FROM INSTRUCTOR.
KIN550 Nutrition Biochemistry and Integrative Metabolism
3 credits Fall & Spring Semester
To learn the fundamental biochemical structure and pathways governing nutrient intake and utilization. Students will learn how major forms of nutrients (macronutrients, vitamins, minerals and trace elements) are processed and utilized by different organs with a particular emphasis on muscle metabolism. Students will also learn how to relate their newly acquired knowledge to health and disease outcomes with focus on lifestyles disease related to metabolism such as diabetes and obesity.
PREREQUISITE: STUDENTS ARE EXPECTED TO BE FAMILIAR WITH BASIC PRINCIPLES OF NUTRITION, ANATOMY AND PHYSIOLOGY, HAVE COMPLETED BIOCHEMISTRY, OR RECEIVE PERMISSION FROM INSTRUCTOR.

KIN557 Diagnostic Imaging Techniques In Sports Medicine
3 credits Spring Semester
This course is designed as an elective for undergraduate KIN students or graduate students. The basic physics of radiological imaging will be covered including radiology, fluoroscopy, CT scan, ultrasound, MRI, and nuclear medicine including image archiving. Normal anatomy will be compared to the corresponding radiographic anatomy. Common sports injuries will be evaluated by multiple radiographic modalities and will be correlated with the clinical condition. Discussion will include bony pathology as well as soft tissues such as ligaments, tendons, and menisci.
PREREQUISITE: ANATOMY, PHYSIOLOGY, OR PERMISSION OF INSTRUCTOR.

KIN561 Facility Management
3 credits Fall & Spring Semester
Facility management provides students with an understanding of fitness entrepreneurship, giving students a comprehensive understanding of the, laws, regulations, policies, and work involved in setting up a fitness facility such as a gym, wellness center, or athletic training center. Students are responsible for developing a viable sports or fitness complex including all aspects of administrative and facility management.

KIN562 Fiscal Management in Sport Administration
3 credits Fall Semester
Fiscal management as related to athletic sports administration, recreation and leisure sports administration, and physical education.
PREREQUISITE: BACKGROUND AND EXPERIENCE IN EXERCISE SCIENCE OR PERMISSION

KIN563 Facilities and Event Management
3 credits Spring Semester
This course is designed to introduce students to principles and practices of planning, funding and managing facilities associated with sports participation including professional sport venues, college sports, parks, recreational sport and health/fitness clubs. Students will gain an understanding of promoting, marketing, and maintaining sport facilities.
PREREQUISITE: KIN 566 (FORMALLY ESS 566)

KIN564 Principles of Sport Marketing
3 credits Fall & Spring Semester
This course will focus on the vast world of sports marketing. The basic principles of marketing and marketing management will be introduced and integrated with application of these principles to sport and sports-related organizations.
PREREQUISITE: ESS 301 OR PERMISSION OF INSTRUCTOR.
KIN565 Legal Aspects of Sports and Exercise Science  
3 credits Spring Semester  
Legal liability, personal injury, negligence and other related legal aspects of sports and exercise science.  
PREREQUISITE: BACKGROUND AND EXPERIENCE OR PERMISSION.

KIN566 Organization and Administration of Sports Programs  
3 credits Fall Semester  
Administrative and organizational procedures and problems specific to athletic administration, recreation and leisure sports administration, and physical education.  
PREREQUISITE: BACKGROUND AND EXPERIENCE IN EXERCISE SCIENCE OR PERMISSION.

KIN567 Elements of Sports Psychology  
1- 3 credits Fall & Spring Semester & First & Second Summer Session  
Introduction to the study of sport and exercise psychology including theory, current research and practical application.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

KIN568 Developmental Sports Psychology  
3 credits Offered By Announcement Only  
Examination of the concept of sport psychology which includes but is not limited to performance, enhancement, student performance and academic application.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

KIN570 Advanced Programming  
3 credits Fall & Spring Semester  
Advance programming allows students to dissect sports by movement, metabolism and limitation. The course investigates current trends and evidenced based applications of specific training techniques for optimal sport performance. Students will perform complete sports analysis and develop periodized programs for major sports.

KIN571 Sport Industry in South Florida  
3 credits Spring Semester  
This course will examine the various sport based organizations/events that are part of the sport industry in South Florida. Study of these organizations/events will include (a) products/services produced, (b) organizational structure, (c) economic impact on the local community, (d) key management personnel, (e) physical facilities, and (f) internship/employment opportunities.

KIN572 Creative Approaches to Problem Solving and Conflict Management  
3 credits Spring Semester  
This hands-on course will examine the concepts of problem solving and conflict management from both personal and organizational perspectives. Students will have the opportunity to study in-depth both of these concepts (and the relationship between them) through a combination of lecture, theory, individual and group activities, readings, practical exercises, and self-assessment tools.

KIN573 ADVANCED SPORT GOVERNANCE  
3 credits Spring Semester & Second Summer Session  
This course provides the student with an examination of the governing organizations of sport at the youth, secondary, intercollegiate, professional, international, sport specific and Olympic levels. In addition, policy development in sport management will be explored.  
PREREQUISITE: GRADUATE STANDING.
KIN574 Ethical Decision Making in Sports and the Professions
3 credits  Fall & Spring Semester
This course will examine ethical decision-making in a variety of environments with an emphasis on sport professions. Real and hypothetical situations will be utilized, and the course will combine theory with practical application. The case method in sport ethics will be incorporated.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

KIN575 Essential Leadership in Sport and the Professions
3 credits  Fall & Spring Semester
This course will examine the concept of leadership as it pertains to sports and other professions. Various leadership and management skills will be included with a focus on practical applications in a work environment. Theory and self-assessment strategies will be incorporated.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

KIN576 Practical Approach to Motivation and Ethical Decision Making
1-3 credits  Spring Semester
A critical study of practical problems of professionals in Exercise and Sport Sciences.
PREREQUISITE: BACKGROUND AND EXPERIENCE OR PERMISSION.

KIN577 Advanced Nutrition for Health and Fitness
3 credits  Fall & Spring Semester & First & Second Summer Session
This course presents an in-depth study of the nutritional concerns of today's Recreational and competitive athlete. Topics include dehydration, classic carbohydrate loading, protein needs, ergogenic aids, and more. State-of-the-art research in the field is provided. This is also a writing intensive course. Thus, writing skills will represent an integral part of one's grade.
PREREQUISITE: KIN 155 AND 221 OR 521 (FORMALLY ESS 155, 221 AND 521).

KIN578 Pharmacology for Allied Health Professionals
3 credits  Spring Semester
The study of drug families and drugs in common use across spectra of age, illness, disease, and disability. Students will understand body systems treated with current pharmaceuticals over-the-counter (OTC) medications, and neutratechuals. Actions, key adverse effects, and influences on individuals undergoing physical activity will be emphasized.
PREREQUISITE: KIN 521 (FORMALLY ESS 521).

KIN579 Principles of Exercise Prescription/Assessment: Cardiovascular
3 credits  Spring Semester
This course presents a comprehensive overview of the physical, physiological and metabolic responses of the human body to exercise testing and training both in health and disease. The successful student will gain an understanding of the process involved in prescribing safe and effective therapeutic exercise in healthy individuals as well as patients with heart and lung disease, diabetes and obesity. An overview of environmental and legal considerations in the prescriptive process will also be discussed.
PREREQUISITE: KIN 521 (FORMALLY ESS 521).
KIN580 Principles of Exercise Prescription: Neuromuscular

3 credits  
Spring Semester
An examination of the scientific bases of modern training techniques designed to optimize performance, their functional application and potential impact on performance in sport and everyday activity.
PREREQUISITE: KIN 520 AND 521 OR PERMISSION OF THE INSTRUCTOR (FORMALLY ESS 520 AND 521).

KIN581 Development and Maturation of Athletes.

3 credits  
Spring Semester
This course is an in-depth study of pediatric exercise physiology with special emphasis on growth, maturation, physical activity, and performance. Topics include a comprehensive summary of biological growth and maturation, processes as it impacts physical performance. Additionally, students will learn the bases of pediatric exercise physiology in order to understand the concepts of motor development, strength, aerobic and anaerobic performance in the pediatric population.

KIN585 Advanced Topics in Kinesiology and Sport Sciences

3 credits  
Spring Semester & First & Second Summer Session
This course will provide a synthesis of essential concepts in specialty subjects relevant to one's field of interest.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

KIN586 Exercise Prescription/Assessment Laboratory

3 credits  
Fall Semester
This course presents an overview of the laboratory techniques used to assess cardiovascular endurance and general fitness, pulmonary function and anaerobias observed during competition.
PREREQUISITE: KIN 579 (FORMALLY ESS 579).

KIN587 Laboratory Experience in Sports Nutrition

3 credits  
Spring Semester
This laboratory class provides case study analyses and computerized nutrient analysis systems designed to evaluate nutrition and hydration needs of the recreational and competitive athlete. From urinalysis and blood work to body composition and computerized nutrient data base systems, this laboratory provides a clinical approach to evaluating the nutrition status of the exercising individual. Co requisite: ESS 577.
PREREQUISITE: COREQUISITE ESS 577.

KIN588 Advanced Gross Anatomy in Kinesiology and Sport Sciences

3 credits  
Spring Semester
Human dissection of the major muscles, arteries and nerves of the body. Course is held at the University of Miami, Medical Campus, and cadaver laboratory. Special consideration is given to injury sites in sports such as the knee, shoulder, elbow, neck and spinal areas. Students are required to pay a $100 laboratory fee for the class. This course is to be taken by undergraduate Athletic Training majors and for the 5-year Sports Medicine with a Concentration in Athletic Training program students only.
PREREQUISITE: MUST BE ATHLETIC TRAINING MAJORS OR IN THE 5-YEAR SPORTS MEDICINE WITH A CONCENTRATION IN ATHLETIC TRAINING PROGRAM.
KIN589 Directed Readings in Kinesiology and Sport Sciences
3 credits                           Fall & Spring Semester & First & Second Summer Session
Directed Readings focusing on research and contemporary trends in the field.
PREREQUISITE: PERMISSION OF CHAIRPERSON.

KIN590 Special Topics in Kinesiology and Sport Sciences
1-3 credits                         Fall & Spring Semester & First & Second Summer Session
This course is designed for students wishing to focus on a specific area of study within the umbrella of the Kinesiology and Sport Sciences curriculum. Students will be given supervision and support in a direction relevant to their needs and interests in a structured setting.
PREREQUISITE: BACKGROUND AND EXPERIENCE OR PERMISSION.

KIN599 Advanced Programming for Endurance Athletes
3 credits                           Fall & Spring Semester
This course provides students with training techniques to improve aerobic capacity, endurance, and lactate threshold for optimal performance. Students will review evidenced based principles of sports nutrition, strategies to ensure proper hydration, thermoregulation, and fuel (substrate) availability during prolonged exercise as well as develop programs for competitive sports including triathlon, marathon, and cycling.

TEACHING AND LEARNING
TAL101 Social and Technological Foundations of Education.
3 credits                           Fall & Spring Semester
Interdisciplinary overview of the historical development of education in the United States. Topics include history of education, schooling as a social institution, school funding, ethics, legal issues, racism, social class, sexism, homophobia and heterosexism, language-based discrimination and religion. This course emphasizes the interdependent nature of school and culture; it critically analyzes issues facing children, parents, and educators using this larger cultural framework.

TAL102 Educational Technology Laboratory
1 credit                            Fall & Spring Semester
Applications of technology to education, including use of technology in instruction, assessment, and productivity. Field based. Co requisite: TAL 101.

TAL103 Psychological Foundations of Education
3 credits                           Fall & Spring Semester
Overview of major frameworks in psychology that inform teaching and learning within classroom settings. Major theories of development related to language, affect and cognition across the life span and within diverse settings. Attention is drawn to contributions from social and personality psychology, cognitive science, testing and psychometrics to promote learning through classroom instruction and assessment.

TAL107 American Sign Language I
3 credits                           Fall Semester
This course is designed to allow participants to learn about Deaf Culture and be able to sign with sufficient fluency to discuss work, social, and family topics using two to four sentence responses.

TAL191 Developmental Reading for College Students
3 credits                           Fall & Spring Semester
Instruction in college level reading strategies based on individual student needs. Emphasis on vocabulary, comprehension and techniques of test preparation.
TAL203 Children's Literature
3 credits  
Fall & Spring Semester
History, trends, and genres of children's literature with emphasis on children's literature as a curriculum resource.

TAL204 Building Positive Relationships in Diverse Inclusive Secondary Schools.
3 credits  
Fall & Spring Semester
Course is designed to assist general education teachers in meeting the needs of diverse secondary school students. Emphasis is placed on language and culture in the classroom, as well as students with disabilities.
PREREQUISITE: TAL 101.

TAL207 American Sign Language II
3 credits  
Spring Semester
This course is designed to allow participants to learn about Deaf Culture and be able to sign with sufficient fluency to discuss work, social, and family topics using four to six sentence responses. Students will be able to independently participate in a signed conversation without the use of voicing.
PREREQUISITE: TAL 107 (ASL I).

TAL304 Content Area Reading and Learning Strategies
3 credits  
Fall & Spring Semester
Essentials of literacy instruction in different subject areas for middle, junior, and senior high schools; instructional methods and materials for development of language arts, reading, and study skills. Emphasis is placed on selecting appropriate materials, motivating students, and helping students with exceptional needs and students who are English language learners. Field experience required.

TAL305 Classroom and Behavior Management
3 credits  
Fall & Spring Semester
The principles of behavior analysis and classroom management strategies, both preventative and problem solving. Special emphasis includes effective communication with students, parents and other stakeholders; meeting the needs of all learners based on individual differences, cultural and linguistic diversity; knowledge of research-based strategies that support intellectual, personal and social well-being and development of all students; planning and conducting lessons in a safe, efficient and supportive learning environment. Field experience required.
PREREQUISITE: TAL 101

TAL308 Language Development for Linguistically and Culturally Diverse Children
3 credits  
Fall & Spring Semester
Course provides an introduction to theories of linguistics as well as first and second language acquisition. Readings and lectures serve to highlight the development of language and language challenges faced by students for whom Standard English is a second language and/or a second dialect. Theories of linguistics are used to identify, explain and assess literacy challenges. Field experience required. This course counts as one of two required stand-alone ESOL courses.
PREREQUISITE: TAL 103
TAL320 Introduction to Literacy Assessment and Instruction in Elementary School.
3 credits  Fall & Spring Semester
Multidisciplinary survey of reading and writing acquisition in the elementary school. Assessment and instruction in the major components of reading: phonological awareness, word identification and phonics, fluency, vocabulary, and comprehension. PREREQUISITE: TAL 308 OR TAL 506; APPLICATION TO TEACHER CANDIDACY. COREQUISITE: TAL 321

TAL321 Language Arts in the Elementary School.
3 credits  Fall & Spring Semester
This course focuses on competencies in reading, writing, listening, speaking, viewing and visual representation. Children's literature is infused. Emphasis on research-based practices and multicultural awareness. Field experience required. PREREQUISITE: TAL 308 OR TAL 506; APPLICATION TO TEACHER CANDIDACY. COREQUISITE: TAL 320

TAL322 Mathematics Instruction in the Elementary School
3 credits  Fall & Spring Semester
TAL323 Science and Social Studies Instruction in the Elementary School
3 credits  Fall & Spring Semester
TAL324 Education and the Arts
3 credits  Fall & Spring Semester
Exploration of the fine and performing arts and their relation to Pre-K to 12 educations. Emphasis is placed on experiential learning and methods of incorporating the arts in school curricula. The course also includes a focus on the value of the arts to the individual and society. PREREQUISITE: SOPHOMORE STANDING AND ABOVE.

TAL330 Introduction to the Education of Exceptional Individuals
3 credits  Fall & Spring Semester
A survey course providing a general orientation to Exceptional Individual Education as an integral part of the general education structure. Includes an introduction to appropriate educational programs for exceptional individuals.

TAL332 Assessment of Exceptional Students
3 credits  Spring Semester
Assessment process and techniques used in the identification, assessment, and instruction of exceptional students. PREREQUISITE: TAL 101, 102, 202, 205, 330.

TAL341 Introduction to Models of Curriculum Development in TESOL
3 credits  Offered By Announcement Only
This course is designed to provide participants with professional training in developing multicultural curricula and instructional materials for students in the process of learning English as a new language. PREREQUISITE: TAL 101; 102; 243 OR PERMISSION OF INSTRUCTOR.
TAL360 The Teacher in American Society
3 credits Fall & Spring Semester
This course focuses on the historical development of teaching in the US, contemporary educational reform and social change, issues involving teacher work, the impact of technology on schooling, ethical and legal issues in teaching, topics involving Race, Gender, Social Class and Equity. Popular Culture sources are emphasized in the course's content.

TAL390 Topics in Education
3 credits Spring Semester
Review of emerging policy, practice, empirical research and scholarly writing on important educational issues for which formal course title and syllabus have not been developed and formalized in the UM Bulletin. Allows for experimental instructional formats. Course number indicates appropriate student audience. See Course Notes for specific topic.

TAL420 Introduction to Literacy, Assessment, and Instruction in Elementary School
3 credits Fall & Spring Semester
Literacy instruction in the elementary school with emphasis on curriculum, methods and materials for teaching reading, writing, listening, speaking, and viewing. Field experience is required. Co requisite: TAL 421.
PREREQUISITE: TAL 308; APPLICATION TO TEACHER CANDIDACY; COREQUISITE: TAL 421

TAL421 Language Arts in the Elementary School
3 credits Fall & Spring Semester
A continuation of TAL 420 with an emphasis on assessment, and adaptation. Field experience is required. Co requisite: TAL 420.
PREREQUISITE: TAL 308; APPLICATION TO TEACHER CANDIDACY; COREQUISITE: TAL 420

TAL422 Mathematics Instruction in the Elementary School
3 credits Fall & Spring Semester
Principles and practices in the teaching of elementary-school mathematics. Attention is paid to infusion of technology, linguistic and cultural diversity, students with exceptionalities, and the origins of gender bias. Field experience required.
PREREQUISITE: APPLICATION TO TEACHER CANDIDACY.

TAL425 Inclusive Classrooms in the Elementary School
3 credits Fall & Spring Semester
The course prepares elementary school teachers to meet the individual needs of students with exceptionalities who have been integrated into the general education classroom. Field experience required.

TAL426 Practicum in Reading
3 credits Fall & Spring Semester
Supervised practicum in reading and writing. Emphasis is on assessment and interventions for elementary students with a range of academic, linguistic and cultural challenges in becoming proficient readers.
PREREQUISITE: TAL 320 AND 321.
TAL428 ESOL Curriculum and Methods and Assessments
3 credits Fall & Spring Semester
The course addresses the application of TESOL theories, principles, and current research to the use of curriculum, methods, and assessment. In doing so, the course focuses on an understanding of the differences between curriculum, methods, and assessment designed for children who are native speakers of Standard English and those designed for ESOL. Specific TESOL modifications appropriate for content areas are also addressed. Field experience required. This course counts as the second of two required ESOL specific courses.
PREREQUISITE: TAL 308 OR TAL 506

TAL432 Curriculum and Instruction in Exceptional Student Education for K-6 Settings
3 credits Fall Semester
Instructional strategies and materials appropriate for teaching students enrolled in Exceptional Student Education programs in K-6 settings. Students must be enrolled concurrently in TAL 434. 50 hours of field experience required in an assigned K-6 ESE setting.
PREREQUISITE: TAL 101, 102, 202, 205, 330, 332, AND ADMISSION TO TEACHER CANDIDACY.

TAL434 Curriculum and Instruction in Exceptional Student Education for Grades 7-12 Set
3 credits Fall Semester
Instructional strategies and materials appropriate for teaching students enrolled in Exceptional Student Education programs in grades 7-12 settings. Students must be enrolled concurrently in TAL 432. 50 hours of field experience required in an assigned K-6 ESE setting.
PREREQUISITE: TAL 101, 102, 202, 205, 330, 332, AND ADMISSION TO TEACHER CANDIDACY.

TAL444 Instruction in Secondary Science
2-3 credits Fall Semester
Analysis of methods, materials, and content appropriate for teaching science in the secondary school.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

TAL446 Methods of Teaching Theatre
3 credits Offered By Announcement Only
Analysis of methods, materials, and content appropriate for teaching the theatre arts in elementary and secondary school.

TAL460 Teaching and Learning in Context
3 credits Offered By Announcement Only
This capstone course, taken just prior to Associate Teaching, provides an in-depth treatment of theories and practices in teaching and learning from cognitive and sociocultural perspectives. Includes classroom applications of modern learning theories; ethical, cultural, and legal issues in teaching. The course reviews and reinforces observation skills and reflective teaching practices. The course emphasizes the relationship of theory and practice as students prepare for associate teaching.
PREREQUISITE: CO-REQUISITE: APPLICATION TO ASSOCIATE TEACHING IS PENDING.

TAL470 Associate Teaching in the Elementary School (Semester-Long)
6-9 credits Fall & Spring Semester
A comprehensive semester-long program in observation and supervised teaching in the elementary school. The student spends full time in an elementary school participating in all activities of the teacher under the guidance of school and university personnel.
PREREQUISITE: ACCEPTANCE TO ASSOCIATE TEACHING. COREQUISITE: TAL 480
TAL471 Associate Teaching in the Elementary Schools for K-12 Areas

3-6 credits  
Fall & Spring Semester

A comprehensive program in observation and supervised teaching in the elementary school. The student spends full-time for one half a semester in an elementary school, participating in all activities of the teacher under the guidance of school and university personnel.

PREREQUISITE: APPROVAL OF THE COMMITTEE ON FIELD EXPERIENCES.

TAL473 Associate Teaching in the Secondary School for K-12 Areas

3-6 credits  
Fall & Spring Semester

A comprehensive program in observation and supervised teaching in the secondary school. The student spends full time for one half a semester in a secondary school, participating in all activities of the teacher under the guidance of school and university personnel.

PREREQUISITE: APPROVAL OF THE COMMITTEE ON FIELD EXPERIENCES.

TAL477 Field Experience in Education

1-9 credits  
Offered By Announcement Only

Placement in government agencies, medical centers, adult education centers, public and private school classrooms, community agencies, and local businesses related to academic course work or area of interest. A minimum of 30 hours per credit of supervised field experience. One hour bi-weekly integrative seminars with faculty supervisors to focus on personal meaning derived from and given to the experience, self-evaluation, group sharing, and discussion of commonalities of experiences is required.

PREREQUISITE: PERMISSION OF ADVISOR.

TAL478 Associate Teaching in Elementary School (Year-Long)

4-8 credits  
Offered By Announcement Only

A comprehensive year-long program in observation and supervised teaching in the elementary school. The student spends full time in an elementary school participating in all activities of the teacher under the guidance of school and university personnel following the calendar of the school system.

PREREQUISITE: APPROVAL OF THE COMMITTEE ON FIELD EXPERIENCES.

TAL480 Seminar on Teaching

1-3 credits  
Fall & Spring Semester

The seminar is designed to support teacher candidates during the associate teaching experience. Students receive support and assistance in completing Florida Educator Accomplished Practices (FEAP) electronic portfolios. Students share, reflect, and discuss their daily experiences in class during culminating experience in the field.

PREREQUISITE: COREQUISITE: CONCURRENT WITH ASSOCIATE TEACHING.

TAL490 Advance Topics in Education

3 credits  
Spring Semester

Review of emerging policy, practice, empirical research and scholarly writing on important educational issues for which formal course title and syllabus have not been developed and formalized in the UM Bulletin. Allows for experimental instructional formats. Course number indicates appropriate student audience. See Course Notes for specific topic.
TAL491 Applied Research in Education
3 credits
Fall & Spring Semester
Introduction to basic research methods, ethics in education research, and the implications of research on the practice of teaching. Assist a TAL faculty member with a research project.
PREREQUISITE: FINGERPRINT CLEARANCE FROM MDCPS TAL 101 OR 103 OR PERMISSION OF INSTRUCTOR.

TAL493 Online Teaching & Leadership
3 credits
Fall & Spring Semester
Introduction to teaching-learning process in online learning environments, including asynchronous modalities, assessment and evaluation, technology and digital copyright usage.
PREREQUISITE: TBD

TAL495 Individual Study
1-3 credits
Fall & Spring Semester & First & Second Summer Session
Individual work on a special project under faculty guidance. Application for Admission to Advanced Individual Study will be required.
PREREQUISITE: PERMISSION OF DIRECTING FACULTY MEMBER AND DEPARTMENT CHAIRMAN.

TAL501 Classroom Based Assessment
3 credits
Fall & Spring Semester
Principles and classroom applications of educational measurement and assessment.

TAL502 Classroom Based Research
3 credits
Offered By Announcement Only
Application of research principles to evaluation and improvement of teacher effectiveness. Use of scientific methods in problem solving and decision making in the classroom. Student experiences in the planning, conduct, analysis and reporting of classroom research are included.

TAL503 Technology Applications in Education
3 credits
Fall & Spring Semester
Technology and its role in transforming teaching and learning; core academic-curriculum literacy; and education social systems.

TAL504 Building Positive Relationships in Inclusive Secondary Schools
3 credits
Fall & Spring Semester
Designed to assist general education teachers in meeting the needs of diverse secondary school students. Focus on students with disabilities, language and culture in the classroom, and developing culturally competent classroom management methods.
PREREQUISITE: TAL 101

TAL506 Issues and Strategies for ESOL
3 credits
Offered By Announcement Only
This course provides a comprehensive foundation in ESOL (English for Speakers of Other Languages) competencies based on Florida's mandates and TESOL standards. Theory and practice will be emphasized in the areas of applied linguistics, cross cultural communication and understanding, methods of teaching, assessment, and curriculum and material development.
PREREQUISITE: TAL 101 AND 204 OR PERMISSION OF INSTRUCTOR.
TAL508 Language Development for Linguistically and Culturally Diverse Students
3 credits                    Fall & Spring Semester & First & Second Summer Session
Course will provide an introduction to theories of linguistics, first and second
language acquisition, as well as foundations of English learner education. Readings
and lectures will serve to highlight the development of language and literacy,
including challenges faced by students for whom Standard English is a second language
and/or a second dialect. This course will be the first in a two-course ESOL sequence.

TAL517 Curriculum, Assessment, Teaching and Learning for Physical Science
3 credits                                                    Fall & Spring Semester
Analysis of content knowledge, pedagogy, and materials appropriate for teaching
physical science in the elementary school. The course content focuses on instructional
practice with an emphasis on developing teacher content knowledge in physical science,
pedagogy, and student literacy in physical science.

TAL518 Curriculum, Assessment, Teaching and Learning for Number, Operations, and Algeb
3 credits                                                    Fall & Spring Semester
This course examines topics that address the mathematical ideas underlying number,
operations and algebra. Related curriculum, instructional and assessment issues
will be also discussed.

TAL520 Curriculum, Assessment, Teaching and Learning for Measurement and Geometry
3 credits                    Fall & Spring Semester & First & Second Summer Session
Topics involving measurement and geometry in the K-16 mathematics curriculum, how
students learn and reason, assessment, instructional strategies.
PREREQUISITE: GRADUATE STUDENT; ADVANCED UNDERGRADUATE WITH CONSENT OF PROFESSOR.

TAL521 Curriculum, Assessment, Teaching and Learning for the Life Sciences
3 credits                                                    Fall & Spring Semester
Analysis of content knowledge, pedagogy, and materials appropriate for teaching
life science in the elementary school. The course content focuses on instructional
practice with an emphasis on developing teacher content knowledge in life science,
pedagogy, and student literacy in life science.

TAL522 Curriculum, Assessment, Teaching and Learning in the Earth Sciences
3 credits                                                    Fall & Spring Semester
Analysis of content knowledge, pedagogy, and materials appropriate for teaching
Earth science in the elementary school. The course content focuses on instructional
practice with an emphasis on developing teacher content knowledge in Earth science,
pedagogy, and student literacy in life science.
PREREQUISITE: ADMISSION TO THE GRADUATE SCHOOL

TAL523 Curriculum, Assessment, Teaching and Learning for Data Analysis and Probability
3 credits                    Fall & Spring Semester & First & Second Summer Session
Data in the elementary school: how to gather (biased and unbiased samples), store,
manage, represent, analyze. Probabilistic inferences in elementary school: chance,
ods, counting, related topics.
PREREQUISITE: GRADUATE STUDENT; ADVANCED UNDERGRADUATE WITH CONSENT OF PROFESSOR.

TAL524 Education and the Arts
3 credits                                                    Fall & Spring Semester
Exploration of the fine and performing arts and their relation to PreK-12 education.
Emphasis is placed on experiential learning and methods of incorporating the arts
in school curricula. The course also includes a focus on the value of the arts
to the individual and society.
TAL526 Practicum in Reading
3 credits  Fall & Spring Semester
Supervised practicum in reading and writing. Emphasis is on assessment and interventions for elementary students with a range of academic, linguistic and cultural challenges in becoming proficient readers.
PREREQUISITE: TAL 320, TAL 321

TAL527 Language and Assessment in ESOL
3 credits  Offered By Announcement Only
Study of language systems with a focus on understanding and applying linguistic terms. Course prepares teachers to conduct informal and formal assessment procedures with English language learners. Field experience with English language learners is required.
PREREQUISITE: TAL 531, 550 OR 620, 603, 622.

TAL528 ESOL Curriculum, Methods, and Assessment.
3 credits  Offered By Announcement Only
This course focuses on applying TESOL theories, principles, and current research to the development and use of instructional materials, curriculum, and methods. The course will enhance participant's knowledge of the regular English language arts curriculum in comparison with the ESOL curriculum.
PREREQUISITE: TAL 506.

TAL531 Educating Exceptional Students
3 credits  Fall & Spring Semester
A survey course in special education emphasizing characteristics and problems associated with various categories of exceptional learners. Policy, issues, and trends in special education will be discussed

TAL540 Instruction and Assessment in the Secondary School.
3 credits  Fall & Spring Semester
Research-based instructional processes in the secondary school.
PREREQUISITE: APPLICATION TO TEACHER CANDIDACY.

TAL541 Instruction in Secondary English.
2-3 credits  Fall Semester
Analysis of methods, materials, and content appropriate for teaching language arts in the secondary school.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

TAL542 Instruction in Secondary Mathematics.
3 credits  Offered By Announcement Only
Analysis of methods, materials, and content appropriate for teaching mathematics in the secondary school.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

TAL543 Instruction in Secondary Science.
3 credits  Offered By Announcement Only
Analysis of methods, materials, and content appropriate for teaching science in the secondary school.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
TAL544 Instruction in Secondary Social Studies.
2-3 credits Fall Semester
Analysis of methods, materials, and content appropriate for teaching the social sciences in the secondary school.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

TAL550 Language and Early Reading Instruction
3 credits Fall Semester
Factors related to emergent literacy with an emphasis on diverse aspects of language that influence literacy and learning; development of emergent literacy and word perception; emergent literacy curriculum development; appropriate assessment and instructional techniques. Understanding of reading as a process of student engagement in fluent decoding and construction of meaning. Writing intensive.

TAL551 Word Perception in Reading
3 credits Offered By Announcement Only
Administration and interpretation of a standard reading inventory. An examination of the word recognition and vocabulary curriculum as well as appropriate assessment devices and instructional techniques.

TAL552 Reading Comprehension
3 credits Spring Semester
Development of comprehension, rate, and study skills; reading in the content areas; evaluation of materials, organization of programs; issues, problems, and exceptional readers. Emphasis is placed on understanding reading as a process of student engagement in fluent decoding of words and construction of meaning.

TAL553 Mentoring and Internship in Classroom Teaching
3-6 credits Fall & Spring Semester
A comprehensive program of supervised teaching in elementary or secondary classrooms.
PREREQUISITE: ONE YEAR OF TEACHING EXPERIENCE OR ATTENDANCE IN THE TAECH FOR AMERICA SUMMER INSTITUTE.

TAL554 Literacy and Learning Strategies in the Content Area
3 credits Fall & Spring Semester
Literacy instruction in content areas for grades 6 through 12; instructional methods and materials for development of language arts, reading, and study skills. Emphasis on appropriate materials, motivation, and support for students with exceptional needs and English language learners.

TAL557 Exceptional Student Education and Classroom Management
1-5 credits Fall & Spring Semester
Introduction to theories and methods of effective classroom management and learning environments, perceptions of disabilities, addressing disruptive behaviors in classrooms and behavioral assessment.

TAL558 ESOL Strategies and Classroom Management
1-5 credits Fall & Spring Semester
This course provides a general overview of foundation in ESOL (English for Speakers of Other Languages) competencies based on Florida's mandates and ESOL Standards. Theory and practice will be emphasized in the areas of applied linguistics, cross cultural communication and understanding, methods of teaching, assessment, and curriculum and material development. A Classroom Management Plan will be developed based on current issues and effective classroom strategies for diverse populations.
TAL560 The Teacher in American Society  
3 credits  
Fall & Spring Semester  
This course focuses on the historical development of teaching in the US, contemporary educational reform and social change, issues involving teacher work, the impact of technology on schooling, ethical and legal issues in teaching, topics involving Race, Gender, Social Class and Equity. Popular Culture sources are emphasized. Course designed for graduate credit.

TAL568 Reform, Politics and Social Organizations of Schooling  
3 credits  
Fall & Spring Semester

TAL569 Teaching and Management for Diverse Classrooms  
3 credits  
Fall & Spring Semester  
This course will emphasize building a classroom culture and community that meets the needs of all students, including learners with disabilities and learners with culturally and linguistically diverse backgrounds. A history of major legal requirements for diverse populations is examined, including the meaning of learning differences, definitions and causes of disabilities, language acquisition processes, and methods for teaching diverse populations. An introduction to theories and methods of effective classroom management for building learning communities is integrated throughout the course.  
PREREQUISITE: CO-REQUISITE(S): GRADUATE ADMISSION TO THE EDUCATION AND SOCIAL CHANGE PROGRAM TRACK

TAL570 Associate Teaching in the Elementary School.  
6-9 credits  
Offered By Announcement Only  
A comprehensive semester-long program in observation and supervised teaching in the elementary school. The student spends full-time in an elementary school participating in all activities of the teacher under the guidance of school and university personnel.  
PREREQUISITE: ACCEPTANCE TO ASSOCIATE TEACHING.

TAL572 Associate Teaching in the Secondary School.  
6-9 credits  
Offered By Announcement Only  
A comprehensive program in observation and supervised teaching in the secondary school. The student spends full-time in a secondary school participating in all activities of the teacher under the guidance of school and university personnel.  
PREREQUISITE: ACCEPTANCE TO ASSOCIATE TEACHING.

TAL577 Human Development, Learning and Schooling  
3 credits  
Fall & Spring Semester  
PREREQUISITE: STUDENT IN GOOD STANDING IN THE MASTERS OF SCIENCE IN EDUCATION DEGREE PROGRAM IN ADVANCED EDUCATIONAL STUDIES: EDUCATION AND SOCIAL CHANGE

TAL580 Seminar on Teaching  
1-3 credits  
Offered By Announcement Only  
Topical seminar to accompany associate teaching

TAL584 Topics in the Professional Development and Supervision of Teachers.  
3 credits  
Offered By Announcement Only  
Topics include the preparation of clinical teachers to induct, guide, and supervise the field experiences of students and associate teachers; techniques in the observation and supervision of in-service teachers; creation and implementation of professional development plans; reading in the research on teacher development across the career.  
PREREQUISITE: TEACHING EXPERIENCE.
TAL590 Topics in Education
3 credits
Spring Semester
Review of emerging policy, practice, empirical research and scholarly writing on important educational issues for which formal course title and syllabus have not been developed and formalized in the UM Bulletin. Allows for experimental instructional formats. Course number indicates appropriate student audience. See Course Notes for specific topic.

TAL591 Workshop in Education
1-6 credits
Offered By Announcement Only
A critical study of practical problems of teachers. Significant problems are defined, literature and research are reviewed, and individual or small group projects are required.

TAL592 Seminar in Teaching English as a Foreign Language
3 credits
Offered By Announcement Only
This course is designed to provide prospective international teachers of English as a new language with essential strategies and multiple models of teaching techniques; and the theoretical framework to apply these strategies and techniques.
PREREQUISITE: ADMISSION TO GRADUATE PROGRAM

TAL593 Online Teaching and Leadership
3 credits
Fall & Spring Semester
Introduction to teaching-learning process in online learning environments, including asynchronous modalities, assessment and evaluation, technology and digital copyright usage.
PREREQUISITE: TBD

TAL594 Workshop in Education
1-6 credits
Offered By Announcement Only
A critical study of practical problems of teachers. Significant problems are defined, literature and research are reviewed, and individual or small group projects are required.

TAL595 Workshop in Education
1-6 credits
Offered By Announcement Only
A critical study of practical problems of teachers. Significant problems are defined, literature and research are reviewed, and individual or small group projects are required.

TAL596 Workshop in Education
1-6 credits
Offered By Announcement Only
A critical study of practical problems of teachers. Significant problems are defined, literature and research are reviewed, and individual or small group projects are required.

TAL597 Workshop in Education
1-6 credits
Offered By Announcement Only
A critical study of practical problems of teachers. Significant problems are defined, literature and research are reviewed, and individual or small group projects are required.
TAL598 Workshop in Education
1-6 credits  Offered By Announcement Only
A critical study of practical problems of teachers. Significant problems are defined, literature and research are reviewed, and individual or small group projects are required.

TAL599 Workshop in Education
1-6 credits  Offered By Announcement Only
A critical study of practical problems of teachers. Significant problems are defined, literature and research are reviewed, and individual or small group projects are required.
BME100 Introduction to Biomedical Engineering for Summer Scholars
3 credits  First & Second Summer Session
This introductory course is designed to expose high school students to biomedical engineering. The program is designed for the exemplary high school student interested in applied mathematics and science. The students will be provided with an understanding and some hands-on experience on topics relative to the discipline of Biomedical Engineering. The course content changes throughout the 3-week duration and includes topics on lasers, medical imaging, biomaterials, bioelectricity and biomechanics. The students will be able to understand the challenges associated with the design, testing and FDA clearance of biomedical devices and the importance of the scientific methods in engineering... The laboratory and field trip experiences will deal with the design and testing of a bioelectric device. Summer Scholar Students only.
PREREQUISITE: SUMMER SCHOLAR STUDENTS ONLY.

BME111 Introduction to Engineering I
3 credits  Fall & Spring Semester
Use of engineering tools for problem solving is discussed. Topics include the use of computer techniques for data acquisition, analysis, presentation, software design, computer aided drafting, and development of design skills through several design and building competitions. Introduction to professional ethics and intellectual property rights, the use of MATLAB, AutoCAD, and programming in C++.

BME112 Introduction to Engineering II
0-2 credits  Fall & Spring Semester
Introduction to biomedical engineering analysis, design, and manufacturing processes. Ethics, regulatory factors, and biomedical engineering design tools (mechanical, electrical and computer tools) are introduced. Hands on experience is provided through a project in which the students design, assemble, program, and test biomedical devices.
PREREQUISITE: BME 111.

BME265 Medical Systems Physiology
3 credits  Spring Semester
Human physiological processes from a bioengineering and medical point of view. Pertinent aspects of anatomy, biophysics, biochemistry, and disease mechanisms are also included.
PREREQUISITE: BIL 150, 151, CHM 112.

BME302 Cellular Engineering
3 credits  Spring Semester
PREREQUISITE: BIL 160, CHM 111

BME305 Biomedical Technology
3 credits  Spring Semester
Non-mathematical introduction to technical and clinical aspects of biomedical engineering. Biomedical signals and instrumentation, sensors, transducers, physiological measurements, laboratory instrumentation, implants, cardiac assist devices, radiology, ultrasound, CT, MRI, transmission, and scanning electron microscopy. Field trips to clinical and research laboratories are included. Open only to non-BME students.
PREREQUISITE: BIL 150, CHM 111.
BME310 Mathematical Analysis in Biomedical Engineering  
3 credits  
Fall & Spring Semester  
Mathematical modeling of physiological and other biomedical engineering systems and devices. Basic engineering principles and mathematical tools are covered for rigorous understanding of physiological regulation and control in biosystems.  
PREREQUISITE: MTH 311

BME311 MATLAB for Biomedical Engineers  
1 credit  
Fall & Spring Semester  
Laboratory course for applications of Matlab in biomedical engineering. Upon the completion of this course, students will be able to write Matlab scripts to solve engineering problems and perform basic analysis and processing of biomedical signals. The course includes Matlab programming environment; Metlab variables; FOR, IF and WHILE statements, plotting and advance graphics, user defined functions, symbolic computation, data file management and graphical user interfaces. The course concludes with a final project focused in biomedical applications.  
PREREQUISITE: EEN 118; PREREQUISITE OR COREQUISITE BME 310

BME320 The Evolution of Technology  
3 credits  
Spring Semester  
Organized and taught by an interdisciplinary team, this innovative course is designed for juniors and seniors. An experimental elective, the course uses multimedia to explore the ways in which innovation is driven by the needs of society and individuals, and nurtured by improvements in tools and production. Five broad subject areas will receive special attention: survival, communication, transportation, entertainment and medicine.  
PREREQUISITE: JUNIOR STANDING OR HIGHER, OR PERMISSION OF THE INSTRUCTORS.

BME330 Foundations of Medical Imaging  
3 credits  
Fall Semester  
Physical and biological principles of medical imaging, including ultrasound, X-ray, nuclear, magnetic resonance, electrical impedance and optical imaging. Propagation and interaction of ultrasonic waves, light waves, X-ray photons, and nuclear radiation in hard and soft biological tissue. Co requisite: BME 310.  
PREREQUISITE: PRE OR CO-REQUISITE: BME 310

BME335 Biomaterials  
3 credits  
Fall & Spring Semester  
Introduction to the field of Biomaterials. Review of materials science for four main types of biomaterials: ceramics, metals, polymers, and composites. Lectures on special topics given by guest lecturers who are active in their specific areas, under supervision of the instructor.

BME375 Fundamentals of Biomechanics  
3 credits  
Fall & Spring Semester  
Application of solid and fluid mechanics to describe the mechanical behavior of human motion, mechanical behavior of soft and hard biological tissues, cells and biofluids. Review of fundamental concepts and techniques of mechanics (stress, strain, constitutive relations). Focus on mechanical properties of specific tissues, including tendon, skin, smooth muscle, heart muscle, cartilage, and bone. Cellular and biofluid mechanics will be presented.
BME395 Undergraduate Research in Biomedical Engineering
1-3 credits  Fall & Spring Semester & First & Second Summer Session
Research and/or design projects consisting of an individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF INSTRUCTOR

BME399 Cooperative Education
1 credit  Fall & Spring Semester & First & Second Summer Session
Practical application of classroom theory through alternating semester or summer employment with firms offering positions consistent with the student's field of study. May be repeated.

BME401 Senior Project I
0-2 credits  Fall & Spring Semester
Planning Phase of an individual or group project for seniors, to be taken during the penultimate semester to graduation.
PREREQUISITE: SENIOR STANDING

BME402 Senior Project II
1-2 credits  Fall & Spring Semester
Completion of individual or group project for seniors, to be taken during the final semester before graduation. A total of 3 credits in this 401-402 sequence.
PREREQUISITE: BME 401

BME403
3 credits  Fall & Spring Semester
Completion of individual or group project for seniors, to be taken during the final semester before graduation.
PREREQUISITE: BME 402

BME440 Biomedical Measurements
0-4 credits  Fall & Spring Semester
Introduction to the principles of measurements in physiological and biological systems, as well as a discussion of measurable parameters, transducers, sensors, signal conditioning, and processing. Laboratory experiments are conducted in parallel with the course.
PREREQUISITE: BIL 150, 151

BME450 Biomedical Transport Phenomena
3 credits  Fall & Spring Semester
PREREQUISITE: BME 310

BME460 Introduction to Physiological Fluid Mechanics
3 credits  Spring Semester
The role of transport processes in biological systems, mathematical modeling of physiological fluid transport, conservation of mass and momentum rheology of blood flow in large and small vessels, approximation methods for the analysis of complex physiological flow, fluid flow in the circulation and tissue. Basic engineering principles and mathematical tools are covered for rigorous understanding of physiological fluid flow.
PREREQUISITE: BME 310 AND PHY 206

BME470 Biomedical Signal Analysis
3 credits  Fall & Spring Semester
PREREQUISITE: EEN 118, PRE OR CO: BME 440
BME480 Biomedical Instrumentation
3 credits  Fall & Spring Semester
Analysis and design of systems and electronic circuitry in medical and biological instrumentation. Treatment of bioelectric potentials electrodes, transducers, high gain-low noise input circuits, timing and switching circuits, biotelemetry, bioelectrodes, and bioelectric systems are discussed. Co requisite: BME 440.
PREREQUISITE: PRE OR COREQUISITE: BME 440

BME501 Unified Medical Sciences I
3 credits  Fall Semester
Treatment of the basic biological and medical elements in physiological systems. The anatomy, physiology, biophysics, biochemistry and certain aspects of clinical medicine are unified with an emphasis on cellular and sub cellular systems. Not open to BME undergraduates.
PREREQUISITE: PERMISSION OF COURSE COORDINATOR.

BME502 Unified Medical Sciences II
3 credits  Fall Semester
Treatment of the basic biological and medical elements in physiological systems. The anatomy, physiology, biophysics, biochemistry, and certain aspects of clinical medicine are unified with an emphasis on cardiovascular, renal, digestive, endocrine, and reproductive systems. Not open to BME undergraduates.
PREREQUISITE: PERMISSION OF COURSE COORDINATOR.

BME503 Unified Medical Science III
3 credits  Spring Semester
Treatment of the basic biological and medical elements in physiological systems. The anatomy, physiology, biophysics, biochemistry, and certain aspects of clinical medicine are unified with an emphasis on neural, sensory, and muscular systems. Not open to BME undergraduates.
PREREQUISITE: PERMISSION OF COURSE COORDINATOR.

BME506 Computer Aided Design in Biomedical Engineering
1 credit  Spring Semester
Laboratory course for computer based two and three dimensional drawing and design based on ProEngineer. Parametric design, parts, features, assemblies for complex modeling. Applications in biomedical engineering design.
PREREQUISITE: BME 112, EEN 118

BME507 LabView Applications for Biomedical Engineering
1 credit  Spring Semester
Laboratory course for computer based instrumentation and design based on Labview. Virtual instrumentation, data acquisition and display, GPIB instrument control, biomedical applications in biosignal recording, and monitoring are discussed.
PREREQUISITE: BME 112, EEN 118.

BME512 Regulatory Control of Biomedical Devices
3 credits  Spring Semester
Regulatory agencies and requirements, Food and Drug Administration, 510(k) and premarket approval (PMA), international regulatory requirements, ISO 9000 series, CE, UL, product and process validation, quality engineering, quality improvement programs, rapid prototyping, packaging and sterilization, and project management are discussed.
BME520 Medical Imaging Systems
3 credits
Engineering and scientific principles of medical imaging systems. The concepts of instrumentation and diagnostic applications of different techniques and systems are presented. Demonstrations or exhibitions of medical systems are given in the visits to clinic and research laboratories. Topics include digital image and image processing fundamentals, radiographic (X-ray, CT), magnetic resonance (MRI) and radio-isotopic (PET) systems, and associated image reconstruction techniques. Basic concepts and simulation of imaging systems are emphasized.
PREREQUISITE: EEN 118, 201; COREQUISITE 470 OR EQUIVALENT.

BME521 Medical Imaging Applications
3 credits
Medical applications of imaging systems and image processing techniques. Topics include image fundamentals (resolution, format, and storage), image processing fundamentals (transformation, compression, enhancement, segmentation, registration, and reconstruction), and image analysis fundamentals (calibration, quantification, correlation, linearity and depiction). Course includes dedicated computer laboratory projects and demonstrations given in clinical and research laboratories at the medical campus. Co requisite: BME 570 or equivalent.
PREREQUISITE: EEN 118, 201; COREQUISITE: BME 470 OR EQUIVALENT.

BME522 Scanning Electron Microscopy in Biomedical Devices
3 credits
Physics and operating principles of scanning electron microscope (SEM), transmission electron microscope (TEM), and optical light microscope. Biological tissue preparation, storage, fixation and digital image storage. Each student will learn to use the SEM in the design and/or analysis of a biomedical device.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BME525 Special Problems
1- 3 credits
Research and/or design projects consisting of an individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: SENIOR OR GRADUATE STANDING; PERMISSION OF INSTRUCTOR.

BME526 Special Problems
1- 3 credits
Research and/or design projects consisting of an individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

BME529 Special Problems
1- 3 credits
Research and/or design projects. Individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.
BME531 Technical Entrepreneurship I
1 credit  Fall & Spring Semester
The first half of a two-semester sequence that simulates the work of a product development team to gain experience in technical entrepreneurship. The students propose product ideas, assess those collectively, select a few, form teams, define the product, and perform market analysis. The course is concluded with a business and technical development plan for the team's project. Lectures are presented on a variety of entrepreneurial topics.
PREREQUISITE: JUNIOR OR HIGHER STANDING.

BME532 Technical Entrepreneurship II
2 credits  Fall & Spring Semester
The second half of a two-semester sequence that simulates the work of a product development team to gain experience in technical entrepreneurship. The students complete the development of a working prototype and refine their marketing and business plan based on experience gained during the development phase. Lectures are presented on relevant entrepreneurial topics.
PREREQUISITE: JUNIOR OR HIGHER STANDING.

BME535 Advanced Biomaterials
3 credits  Offered By Announcement Only
Applications of biomaterials in different tissue and organ systems. Relationship between physical and chemical structure of materials and biological system response are discussed as well as choosing, fabricating, and modifying materials for specific biomedical applications.
PREREQUISITE: BME 335 OR PERMISSION OF INSTRUCTOR.

BME540 Microcomputer-Based Medical Instrumentation
3 credits  Offered By Announcement Only
Principles and design of microcomputer-based biomedical instruments, analog and digital signal conversion, microcomputer hardware and software design, algorithm development for medical applications, medical signal processing with microcomputers, software safety in life support systems, and current applications are discussed.
PREREQUISITE: EEN 304 AND 315, OR PERMISSION OF INSTRUCTOR.

BME541 Medical Electronic Systems Laboratory
2 credits  Spring Semester
PREREQUISITE: COREQUISITE: BME 540.

BME545 Biomedical Optical Instruments
3 credits  Fall Semester
Introduction to geometrical optics, light sources, detectors, and fiber optics with an emphasis on engineering aspects and medical applications. Fiber-optic delivery systems for medical applications, optics of the eye and visual instruments, and optical instruments used in medicine (microscopes, endoscopes, and ophthalmic instruments) are discussed. Hands-on sessions in the laboratory are included.
PREREQUISITE: PHY 207, MTH 311 OR PERMISSION OF THE INSTRUCTOR.
BME546 Medical Applications of Lasers  
3 credits  
Spring Semester  
Review of geometrical optics, fiber optics, wave optics, laser physics, and technology. Medical laser systems, optical properties of tissue, light propagation in tissue, laser-tissue interactions, and surgical applications of lasers are also covered. Hands-on sessions in the laboratory are included.  
PREREQUISITE: PHY 207, MTH 311 OR PERMISSION OF THE INSTRUCTOR.

BME550 Rehabilitation Engineering  
3 credits  
Fall Semester  
Principles of rehabilitation engineering with emphasis on currently used assistive devices for ambulation and hand motion. Human neural and muscle physiology, electromyography, functional electrical stimulation, artificial and biological sensors, control, and design aspects of active assistive devices for the handicapped are discussed.  
PREREQUISITE: EEN 305 OR PERMISSION OF INSTRUCTOR.

BME555 Fundamentals of Computational Neuroscience  
3 credits  
Spring Semester  
Major concepts include neural signaling and communication from the single neuron to system of neural ensembles and the role of neural computation in engineering applications. Theory and principles of information processing in the brain are presented. Experimental data and computer simulations are used to provide real examples for students experimentation.  
PREREQUISITE: BME 265 OR PERMISSION. COREQUISITE: BME 470

BME565 Principles of Cellular and Tissue Engineering  
3 credits  
Fall Semester  
Introduction to cellular and tissue engineering. Current therapeutic approaches for lost/damaged tissue or organ function, tissue engineering strategies to replace/repair tissue or function: infusion of cells, production and delivery of tissue-inducing substances, cells placed on or within biomaterial scaffolds, examples of tissue engineering applications: skin, heart muscle, blood vessels, and blood.  
PREREQUISITE: BIL 150, BME 335 OR PERMISSION OF INSTRUCTOR.

BME566 Cell and Tissue Engineering Laboratory  
1 credit  
Fall Semester  
PREREQUISITE: CO-REQ: BME 565

BME570 Biomedical Signal Processing  
3 credits  
Spring Semester  
Course topics include quantitative description, analysis, and processing of biophysical and physiological (cardiovascular, neural, sensory, muscular, respiratory and other) signals using computers. Survey of time-frequency representations, correlation, convolution, coherence, filtering, averaging, and classification is also included.  
PREREQUISITE: EEN 118, 470

BME571 Introduction to Biosignal Processing Lab  
1 credit  
Fall & Spring Semester  
Laboratory course in conjunction with BME 570 course. Co requisite: BME 570.  
PREREQUISITE: COREQUISITE: BME 570.
BME575 Biomechanics II
3 credits
Offered By Announcement Only
Applications of linear and nonlinear viscoelastic concepts to the biomedical characteristics of biological tissues and structures at small and large deformations of blood flow, experimental methods of analysis, artificial organs, and life-support systems.
PREREQUISITE: BME 375.

BME581 Radiation Biology and Physics
3 credits
Fall Semester
The principles, methods, and results of radiation biology with physics applications in radiation therapy will be introduced in the course. The course will focus on mechanisms of radiation and biological system interaction, biological aspects of the foundation of radiation therapy, and mathematical models for radiobiological analysis.
PREREQUISITE: PREREQUISITE OR COREQUISITE: BME 502 OR PERMISSION OF THE INSTRUCTOR.

BME582 Radiation Dosimetry
3 credits
Spring Semester
The principles and instrumentation of radiation dosimetry with focus on the applications in radiation therapy will be introduced in this course. The course will emphasize radiation dose computation algorithms and applications in treatment dose planning. The course will also cover a categorized dosimetric analysis of radiation therapy to different clinical conditions.
PREREQUISITE: BME 310, 581.

BME587 Finite Element Analysis for Engineers
3 credits
Fall & Spring Semester
Introduction to the finite-element method. Hands-on applications of FEMLAB software to the analysis of structural, thermal, chemical, electro-magnetic, optical, and fluid flow problems.
PREREQUISITE: MTH311 OR PERMISSION OF INSTRUCTOR

BME595 Graduate Research in Biomedical Engineering
1- 3 credits
Fall & Spring Semester & First & Second Summer Session
Research and design projects consisting of an individual investigation of current problems. Subject and credit to be arranged with the instructor.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BME599 Cooperative Education
1 credit
Offered By Announcement Only
Practical application of classroom theory through alternating semester or summer employment with firms offering positions consistent with the student’s field of study. Course may be repeated. Periodic reports and conferences are required.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.
CAE100 Introduction to Civil, Architectural, and Environmental Engineering
3 credits                                 Second Summer Session
This introductory course is designed to expose high school students to a variety of specific disciplines within the civil engineering arena to assist them in making informed decisions about possible college majors. The program is designed for the exemplary high school student interested in applied mathematics and science. All students enrolled in this course will gain experience in problem solving, engineering mechanics, computer simulation, and laboratory activity. The course content changes throughout the 3-week duration and includes topics on civil engineering, environmental engineering, and architectural engineering. The students will be provided with an understanding and some hands-on experience on topics relative to the disciplines of civil, architectural, and environmental engineering. Via an introduction to several case histories, the students will be able to understand the challenges associated with the design and construction and importance of the scientific methods in engineering. The laboratory and field trip experiences will deal with bridge building, material testing, water purification, and building systems.
PREREQUISITE: SUMMER SCHOLAR STUDENTS ONLY

CAE111 Introduction to Engineering I
3 credits                                                    Fall & Spring Semester
Use of engineering tools for problem solving. Computer techniques for data acquisition, analysis and presentation, software design, and computer aided drafting are covered. Development of design skills is achieved through several design and building competitions. Introduction to professional ethics and intellectual property rights, MATLAB, AutoCAD, and programming in C++ is also included.

CAE112 Introduction to Engineering II
2 credits                                                           Spring Semester
Hands-on applications of various surveying instruments for leveling, angles and distance measurements, and other engineering applications. Hands on application of Geographic Information Systems, including ArcView and extensions.
PREREQUISITE: CAE 111 OR PERMISSION OF INSTRUCTOR

CAE210 Mechanics of Solids I
3 credits                             Fall & Spring Semester & First Summer Session
Vectors, force systems, equilibrium, analysis of frames, machines, trusses for internal forces, friction, centroids, moment of inertia, and shear and bending moment diagrams are discussed.
PREREQUISITE: MTH 110 OR 111; OR COREQUISITE PHY 205; OR PERMISSION OF INSTRUCTOR.

CAE211 Mechanics of Solids II
3 credits                                                    Fall & Spring Semester
Flexural, shear, principal, and torsional stresses are discussed as well as displacements and instability. An introduction to statically indeterminate analysis is also included.

CAE212 Structural Laboratory
1 credit                                                     Fall & Spring Semester
Laboratory techniques, tests for tension, compression, shear, bending, and torsion are discussed. Models, similitudes, buckling of columns, and review of current research are also included. Laboratory 3 hours. Co requisite: CAE 211.
PREREQUISITE: CAE210, ENG107, IEN 311.  CO-REQUISITE OR PRE-REQUISITE: CAE 211
CAE213 Behavior of Structural Systems I
3 credits Fall Semester
Design and testing of experimental models of qualitative and quantitative prediction of full scale structural behavior. Investigation of single and multi-story rectangular frames, curved structures and longspan buildings. Application of graphical and analytical techniques to determine basic system layout and preliminary dimensioning of key subsystems and members is also included.
PREREQUISITE: ARC 231.

CAE240 Environmental Pollution
3 credits Spring Semester
Exploration of contemporary environmental issues. Introduction to engineering approaches for protecting and cleaning up the environment, techniques for assessing the impact of human activity on the environment, strategies for pollution control and implementation of environmental mitigation measures.
PREREQUISITE: SOPHOMORE STANDING.

CAE310 Structural Analysis
3 credits Fall & Spring Semester
Analysis of statically determinate and indeterminate structures for internal forces, external reactions, displacements, including influence lines.
PREREQUISITE: CAE 210, PHY 206.

CAE313 Behavior of Structural Systems II
3 credits Spring Semester
Overall analysis of simple and multi-story frame structures. Consideration of flat plates, prestressed concrete flat slabs, slab and beam, joist and girder, waffle and space truss systems, columns, wall and rigid frame subsystems under vertical and horizontal loads. Application of structural model analysis to supplant or supplement mathematical analysis is included.
PREREQUISITE: CAE 213.

CAE320 Concrete Structures
3 credits Fall & Spring Semester
Course topics include design of concrete beams, columns, structural systems one-way slabs, and isolated footings by ultimate design methods.
PREREQUISITE: CAE 310(CAE 310 IS A PREREQUISITE OR CO-REQUISITE FOR THIS COURSE)

CAE321 Steel Structures
3 credits Fall & Spring Semester
Design of tension, compression, flexural members, and beam columns using load and resistance factor design are discussed. Introduction to design and detailing of welded and bolted connections is also included.
PREREQUISITE: CAE 310.

CAE330 Fluid Mechanics
3 credits Fall & Spring Semester
Properties of fluids, gas systems, pressure distribution in static fluids, and hydrostatic forces on plane and curved surfaces are discussed. Kinematics and dynamics of fluid motion, dimensional analysis and similitude, flow in closed conduits, pumps, design of water distribution systems, and an introduction to flow in open channels is also included.
PREREQUISITE: CAE 210, PHY 206.
CAE340 Introduction to Environmental Engineering
3 credits Fall & Spring Semester
Environmental mass and energy balances, introduction to environmental chemistry, air pollution, water pollution, sustainable solid waste management, risk assessment, and global atmospheric change are discussed.
PREREQUISITE: MTH 112, CHM 111 OR 151 OR PERMISSION OF INSTRUCTOR.

CAE345 Environmental Laboratory
0-3 credits Fall Semester
Laboratory-based course focusing on the analysis of environmental samples including water, wastewater, air, and solids. Basic analytical techniques and quality control are also included as well as an introduction to advanced analytical measurements.
PREREQUISITE: CHM 112, CAE 340.

CAE350 Transportation Engineering I
3 credits Fall Semester
PREREQUISITE: MTH 211 (CALCULUS III) AND JUNIOR STANDING.

CAE370 Geotechnical Engineering I
3 credits Fall & Spring Semester
Soil composition and classification, excavation, grading, fill compaction, stress distribution in soils, one-dimensional flow of water through soil, laboratory, and field permeability, effective stress concept, calculation of consolidation, field settlement, bearing capacity, and design and analysis of shallow foundations are discussed.
PREREQUISITE: CAE 211. COREQUISITE: CAE 371.

CAE371 Geotechnical Laboratory
1 credit Fall & Spring Semester
Evaluation of physical and mechanical properties of soils, and preparation of reports. Three hours.
PREREQUISITE: ENG 107, IEN 311. COREQUISITE: CAE 370.

CAE380 Electrical and Illumination Systems for Buildings
3 credits Spring Semester
Typical electrical systems for buildings including electrical circuits, protective devices and code requirements. Illumination and lighting design.
PREREQUISITE: PHI 207 (UNIVERSITY PHYSICS III)

CAE381 Mechanical Systems for Buildings
3 credits Spring Semester
Principles and procedures for the analysis and design of heating, ventilating, and air conditioning (HVAC) systems in buildings. Topics include moist air properties and conditioning processes, heating and cooling load calculations, building energy consumption, thermal comfort, indoor air quality, air distribution and diffusion, HVAC systems and component selection.
PREREQUISITE: MAE 303 (THERMODYNAMICS I) OR PERMISSION OF INSTRUCTOR
CAE395 Undergraduate Research
1-3 credits  
Spring Semester
Designed for the undergraduate student who wishes to engage in research. Not for graduate credit or for baccalaureate graduation credit. Subject and credit to be arranged with the instructor.
PREREQUISITE: PERMISSION OF INSTRUCTOR

CAE399 Internship
1 credit  
Fall & Spring Semester & First & Second Summer Session
Practical application of classroom theory through employment with firms offering positions consistent with the student's field of study. Courses may be repeated.

CAE400 Preparation for FE Exam
1 credit  
Spring Semester
Review of material in preparation for the Fundamentals of Engineering (FE) examination. For credit only.
PREREQUISITE: SENIOR STANDING.

CAE402 Professional Engineering Practice
3 credits  
Fall & Spring Semester
Principles of engineering economics and economic evaluation of engineering projects. A discussion of professional practice issues including the philosophy and methodology of engineering, professional licensure and ethics. Discussion of the business aspects of engineering including business organization, management, contracts and legal issues. Engineering leadership in the formulation of public policy.
PREREQUISITE: SENIOR STANDING.

CAE403 Senior Design Project I - Civil & Architectural
1 credit  
Fall Semester
Two-semester comprehensive design project based on the knowledge and skills acquired in earlier coursework and incorporating engineering standards and realistic constraints. The faculty coordinator and several practicing engineers/architects provide consultation, guidance, and recommendations on aspects such as problem definition, evaluation of design approaches, design development, and the preparation of construction documents.
PREREQUISITE: SENIOR STANDING OR PERMISSION OF INSTRUCTOR.

CAE404 Senior Design Project II - Civil & Architectural
2 credits  
Spring Semester
Second semester of a two-semester comprehensive design project based on the knowledge and skills acquired in earlier coursework and incorporating engineering standards and realistic constraints. The faculty coordinator and several practicing engineers/architects provide consultation, guidance and recommendations on aspects such as problem definition, evaluation of design approaches, design development and the preparation of construction documents. Prerequisite: CAE 403.
PREREQUISITE: CAE 403.

CAE430 Water-Resources Engineering I
3 credits  
Spring Semester
Basic principles of open channel flow. Computation of water surface profiles. Design of hydraulic structures, design of lined and unlined open channels, and design of sanitary sewer systems. Introduction to hydrology and analysis of hydrologic data. Rainfall characteristics and peak runoff models.
PREREQUISITE: CAE 330
CAE440 Water Quality Control Systems
3 credits Spring Semester
Principles of domestic wastewater treatment, design of biological and chemical waste treatment processes, design and sizing of small scale treatment units, and design of water treatment processes are discussed. An introduction to industrial waste treatment.
PREREQUISITE: CAE 330, 340 OR PERMISSION OF INSTRUCTOR.

CAE450 Transportation Engineering II
3 credits Spring Semester
Transportation system planning and design. Advanced geometric design for highway and railway/transit. Human, vehicle, and environmental factors affecting the design, operation, and safety of transportation systems. Planning and design of both landside/airside aspects of airport facilities. Water port and multi-modal facilities design.
PREREQUISITE: CAE 350.

CAE460 Construction Management
3 credits Spring Semester
An introduction to the management of construction projects including legal considerations as well as the techniques of management science applied to construction. The course includes engineering methods of cost and time estimating, and exercises in applications of engineering economics, network planning techniques, including CPM and PERT are introduced. The management principles of time and cost control are also explored. Computer application of project management tools are included.
PREREQUISITE: SENIOR LEVEL STANDING.

CAE470 Foundations and Earth Retaining Systems
3 credits Fall Semester
Natural soil deposits and subsoil exploration. Geotechnical analysis and design of shallow and deep foundations. Theories of lateral earth pressure. Design and analysis of earth-filled retaining systems.
PREREQUISITE: CAE 330, 370, 371

CAE480 Design of Environmental Systems for Buildings
3 credits Fall Semester
Design of building environmental systems, including water supply and waste removal, space air diffusion, fans, air supply and waste removal, space air diffusion, fans, air distribution systems, building fire safety, and smoke control. Building automation and control are also included.
PREREQUISITE: CAE 330, CAE 380, CAE 381

CAE510 Structural Mechanics
3 credits Offered By Announcement Only
Analysis of stress and deformation of solids. Application to systems in the elastic and inelastic range. Topics include beams of special geometry and support, stress concentrations, stresses in elastic foundations, torsion, energy methods, failure theories, and brittle fracture.
PREREQUISITE: CAE 310 AND SENIOR STANDING.

CAE511 Advanced Structural Analysis
3 credits Fall Semester
General methods of indeterminate analysis. Elements of energy method in indeterminate analysis of axial, flexural torsional and composite members. Basic flexural and stiffness methods and matrix development are also included.
PREREQUISITE: CAE 310.
CAE520 Advanced Design of Concrete Structures  
3 credits  
Spring Semester  
Design of reinforced concrete flat plates, flat slabs, two-way slabs, long columns, and slab-column connections are discussed. Deflections, crack widths, and background of current ACI Building Code are also included.  
PREREQUISITE: CAE 320.

CAE521 Advanced Design of Steel Structures  
3 credits  
Fall Semester  
Steel framing systems, design of members and connections of braced and rigid frames, design for torsion, and design of steel-concrete composite members are discussed.  
PREREQUISITE: CAE 321.

CAE522 Design of Prestressed Concrete Structures  
3 credits  
Offered By Announcement Only  
Materials and systems for prestressing, design of prestressed concrete members for flexure and shear, camber, deflection, and crack control are discussed. Design of continuous beams, compression members, two-way concrete floor systems, and the loss of prestress are also included. Prerequisite: CAE 320.  
PREREQUISITE: CAE 320.

CAE523 Design of Masonry Structures  
3 credits  
Offered By Announcement Only  
Masonry construction. Design of flexural and compression members, bearing walls, shear walls, diaphragms, and connections of masonry structures. Arches, vaults, and buttresses are also included.  
PREREQUISITE: CAE 320.

CAE524 Design of Bridge Structures  
3 credits  
Offered By Announcement Only  
Engineering principles of analysis and design of highway bridges. Topics include load types, failure modes, and design philosophies. Computation of design force envelopes via influence lines. Design of slabs, rolled beam, plate girder, reinforced concrete, and prestressed concrete bridges.  
PREREQUISITE: CAE 310, 320, 321 OR PERMISSION OF INSTRUCTOR.

CAE525 Timber Structural Systems  
3 credits  
Offered By Announcement Only  
Engineering properties of timber, design of tension, compression, and flexural members are covered. The design and detail of connections and hardware, and the design of timber systems and heavy timber construction is also included.  
PREREQUISITE: CAE 310.

CAE530 Water Resources Engineering II  
3 credits  
Fall Semester  
Water quality regulations, fate and transport processes, water-quality control in rivers, lakes, wetlands, oceans, and ground water are discussed.  
PREREQUISITE: CAE 430.

CAE531 Surface-Water Hydrology  
3 credits  
Offered By Announcement Only  
Rainwater characteristics, abstraction processes, surface-runoff, routing, and water-quality models. Design of storm water-management systems, evapotranspiration, and regional water-management is also included as well as case studies.  
PREREQUISITE: PREREQUISITE OR COREQUISITE: CAE 430.
CAE532 Ground-Water Hydrology

3 credits

Offered By Announcement Only


PREREQUISITE: CAE 330.

CAE533 Water-Quality Control in Natural Systems

3 credits

Offered By Announcement Only

Water quality regulations, fate and transport processes, water-quality control in rivers, lakes, wetlands, oceans, and ground water.

PREREQUISITE: CAE 430 (CAE 430 IS A PREREQUISITE OR CO-REQUISITE FOR THIS COURSE)

CAE540 Environmental Chemistry

3 credits

Spring Semester

Kinetics, equilibrium, acid-base, oxidation-reduction, and reaction chemistry applied to water and wastewater engineering.

PREREQUISITE: CHM 112 OR PERMISSION OF INSTRUCTOR.

CAE541 Environmental Microbiology

3 credits

Spring Semester

Classification of microorganisms. Microbial agents of infectious diseases and modes of disease transmission. Control of pathogens through water and waste treatment, food protection, and insect control. Microbial ecology and bioremediation systems. Laboratory exercises in microbiology.

PREREQUISITE: PERMISSION OF INSTRUCTOR.

CAE542 Solid and Hazardous Waste Engineering

3 credits

Fall Semester

Solid-waste characteristics, recycling, incineration, hazardous waste characteristics, prevention, and physical and chemical treatment are covered. Design projects are also included.

PREREQUISITE: CAE 340.

CAE543 Air Pollution Control Engineering

3 credits

Spring Semester

Fundamentals of air pollution and air quality; properties and control of particulates, volatile organic compounds, carbon monoxide, sulfur oxides, and nitrogen oxides; motor vehicle emissions; health and aesthetic effects (acid rain, visibility), laws and regulations, meteorology and pollutant transport in the atmosphere; indoor air pollution.

PREREQUISITE: MAE 303 AND CAE330 OR MAE 309 OR PERMISSION OF INSTRUCTOR.

CAE550 Advanced Highway Design

3 credits

Fall Semester

Functional classification and design volumes; Reviews of traffic, vehicle and roadway characteristics; Design controls, criteria and standards; Vertical alignments; horizontal alignments; compound curves; cross sections; climbing lanes; earthwork computation; at-grade intersection; interchange; Design consistency; GeoPak software implementation; Use of traffic simulation software as a design aid.

PREREQUISITE: CAE 450 OR EQUIVALENT.
CAE560 Sustainable Construction
3 credits
Offered By Announcement Only
PREREQUISITE: SENIOR STANDING IN ARCHITECTURE OR ENGINEERING AND PERMISSION OF INSTRUCTOR

CAE570 Advanced Foundation Engineering
3 credits
Spring Semester
PREREQUISITE: CAE 470 OR PERMISSION OF INSTRUCTOR.

CAE580 Hospital and Health Care Facility Design
3 credits
First Summer Session
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CAE581 Energy-Efficient Building Design
3 credits
Offered By Announcement Only
Concepts and methods of energy-efficient and environmentally-friendly building design. Topics include energy and sustainable design strategies, climate, passive and active solar design, passive cooling systems, day lighting, and computer simulation of energy flows in buildings. A quantitative understanding of energy fundamentals, examples from practice, and design exercises using computer simulation programs are emphasized.
PREREQUISITE: MAE 303 OR PERMISSION OF INSTRUCTOR.

CAE590 Special Topics
1-3 credits
Offered By Announcement Only
Sub-titles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title "Special Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CAE591 Special Topics
1-3 credits
Offered By Announcement Only
Sub-titles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title "Special Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CAE592 Special Topics
1-3 credits
Offered By Announcement Only
Sub-titles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title "Special Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.
CAE593 Special Topics
1-3 credits Offered By Announcement Only
Sub-titles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title "Special Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CAE594 Special Topics
1-3 credits Offered By Announcement Only
Sub-titles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title "Special Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CAE595 Special Problems
1-4 credits Offered By Announcement Only
Project course introducing methods of research through an individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

CAE599 Cooperative Education
1 credit Offered By Announcement Only
Practical application of classroom theory through alternating semester or summer employment with industries offering positions consistent with the student's field of study. Course may be repeated. Periodic reports and conferences are required.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

ELECTRICAL & COMPUTER ENGINEERING
EEN100 Introduction to Electrical and Computer Engineering
3 credits First & Second Summer Session
Introduction to Electrical and Computer Engineering (ECE) for high school students interested in science and technology. The course covers important thematic units of the discipline: electronics, digital design, computer programming and signal processing. Emphasis on hands-on experience in the use of laboratory instrumentation, circuit construction and computer simulation.
PREREQUISITE: UNIVERSITY OF MIAMI SUMMER SCHOLAR STUDENTS ONLY

EEN111 Introduction to Engineering I
3 credits Fall & Spring Semester
Use of engineering tools and computer techniques for problem solving, data acquisition, analysis, presentation, software design, and computer aided drafting. Development of design skills through several design and building competitions is included as well as an introduction to professional ethics, intellectual property rights, the use of MATLAB, AutoCAD, and programming in C++.

EEN112 Introduction to Engineering II
0-2 credits Spring Semester
Course is designed to provide first-year undergraduate students with an introduction to some key electrical and computer engineering concepts and topics by discussing their roles in some of the commonly used electrical and computer engineering systems. Numerical examples, circuit simulations, and computer programming are introduced through the use of MATLAB, microcontroller programming languages, and PSpice. Hands-on experience are provided through a project where the students design, assemble, program, and test a microcontroller-based mobile robot with a variety of sensing devices. Should be taken as a freshman only; otherwise to be replaced by a technical elective.
PREREQUISITE: EEN 111 OR INSTRUCTOR PERMISSION
EEN118 Introduction to Programming
0-3 credits  Fall & Spring Semester
Introduction to computing, problem solving, program design, C++ language fundamentals, and software engineering principles. Software design projects are included.

EEN201 Electrical Circuit Theory
3 credits  Fall & Spring Semester & First Summer Session
Fundamentals of DC-AC circuit laws, including steady state and transient analysis. Lecture, 3 hours.
PREREQUISITE: PREREQUISITE OR COREQUISITE: MTH 112.

EEN204 Electrical Circuits Laboratory
1 credit  Fall & Spring Semester & Second Summer Session
Laboratory work employing the techniques of circuit theory to physical components, devices, and circuits. Use of electronic computing techniques to relate analytical and empirical investigations. Laboratory, 3 hours.
PREREQUISITE: EEN 201.

EEN205 Principles of Electrical Engineering--I
3 credits  Fall & Spring Semester
Fundamentals of DC and AC Circuits and a survey of Electrical Machinery and Electronics. Not open to students with credits in EEN 201. Lecture, 3 hours.
PREREQUISITE: PREREQUISITE OR COREQUISITE: MTH 112.

EEN218 DATA STRUCTURE
3 credits  Fall & Spring Semester
Continuation of Programming with emphasis on C++ and the skills required of a capable programmer. Essential data structures and algorithms, and introducing algorithm analysis. Basic sorting, searching, and data management. Dynamic and static memory management. Object oriented programming.
PREREQUISITE: EEN 118 OR EQUIVALENT.

EEN301 Electromagnetic Field Theory
3 credits  Fall Semester
Vector analysis, static and time-varying fields, Maxwell's equations, propagation of electromagnetic waves, and transmission line theory and applications are discussed.

EEN304 Logic Design
0-3 credits  Fall & Spring Semester & First Summer Session
Boolean algebra and its applications in analysis and design of logic circuits. Introduction to SSI and MSI circuits as building blocks, memory elements, and analysis and synthesis of synchronous and asynchronous sequential systems are discussed.
PREREQUISITE: EEN 118 OR CSC 120.

EEN305 Electronics I
3 credits  Fall & Spring Semester & First Summer Session
Semiconductor physics and devices. Diodes, bipolar-junction transistors (BJT). Introduction to field-effect transistors (FETs) and Operational Amplifiers. Emphasis on dc and ac analysis of electronic circuits. Use of CAD tools such as PSpice.
PREREQUISITE: EEN 201.
EEN306 Electronics II
3 credits  Fall & Spring Semester & Second Summer Session

EEN307 Linear Circuits and Signals
0-3 credits  Fall & Spring Semester & First Summer Session
Second-order transient circuit analysis, Laplace transforms, circuits and waveform analysis using Laplace transform, convolution, Fourier series, and integrals are discussed.
PREREQUISITE: EEN 201.

EEN308 Linear Control Systems
3 credits  Fall Semester
Introduction to system theory, transfer function and state variable modeling of linear continuous time systems, root locus, Bode plot, Nyquist criterion, analysis and controller design using root locus and frequency domain techniques, proportional-integral-derivative controllers.
PREREQUISITE: EEN 307, MTH 210, 311 OR EQUIVALENT.

EEN310 Introduction to Engineering Probability
3 credits  Fall & Spring Semester
Axioms of probability, discrete and continuous random variables, probability density functions. Expectation, conditioning, independence, functions of random variables, characteristic functions, multiple random variables. Sums of random variables, limit theorems, probability bounds, convergence concepts. Introduction to statistical analysis, estimation, and hypothesis testing. Cross-listed with IEN 310.
PREREQUISITE: MTH 112 AND JUNIOR STANDING.

EEN311 Electronics Laboratory
1 credit  Fall & Spring Semester & First Summer Session
Laboratory course in conjunction with courses EEN 305 and 306.
PREREQUISITE: EEN 204. PREREQUISITE OR COREQUISITE: EEN 306.

EEN312 Microprocessor
0-4 credits  Fall & Spring Semester & Second Summer Session
Architecture and operation of modern microprocessor based computer systems and microcontrollers. Assembly language and applications with hands on experience.
Lecture, 3 hours; laboratory, 3 hours.
PREREQUISITE: EEN 304.

EEN315 Digital Design Laboratory
1 credit  Fall & Spring Semester & First Summer Session
Familiarization with properties and use of logic gates, flip-flops, digital standard components, and programmable logic devices. Design and implementation of combinational and synchronous digital systems and Computer Aided Engineering (CAE) tools for design and simulation of digital systems are also included.
PREREQUISITE: EEN 304.
EEN316 Structured Digital Design
1 credit Fall & Spring Semester & Second Summer Session
VHDL (VHSIC (very high speed integrated circuits) hardware description language) introduction and syntax. Functional and behavioral models of VHDL for design, testing, and simulation of digital circuits and programmable logic devices. Design and implementation of combinational and sequential digital systems using VHDL is also included.
PREREQUISITE: PREREQUISITE OR COREQUISITE: EEN 315.

EEN318 Advanced Computer Programming
3 credits Spring Semester
Continuation of the programming sequence. Object oriented programming with C++, emphasizing the skills required of a professional programmer. Essential data structures and algorithms: trees, graphs, hash tables, parsing and text processing. Advanced sorting and data management algorithms. Advanced features of C++; effective programming with C.
PREREQUISITE: EEN 218.

EEN336 Signals and Systems
3 credits Fall Semester
Continuous and discrete-time transform analysis techniques. Linear time-invariant signals and systems, continuous and discrete-time Fourier transforms, and Z-transform are discussed. Sampling and reconstruction of signals, frequency response, transfer functions, and applications are also included.
PREREQUISITE: EEN 307.

EEN341 Networks: Friends, Money, and Bytes
3 credits Fall Semester
PREREQUISITE: MTH 210 OR PERMISSION OF INSTRUCTOR

EEN368 Internet Computing I
3 credits Spring Semester
Principles and practices used in creating interactive Internet sites. Extensive object oriented programming in Java is taught. Use of eXtensible Markup Language (XML) to provide content description. Use of GUI components and graphics to create web based applications.
PREREQUISITE: EEN 218

EEN395 Undergraduate Research in Electrical and Computer Engineering
1-3 credits Fall & Spring Semester & First & Second Summer Session
Research and/or design projects consisting of an individual investigation of real-world contemporary problems. Offered by special arrangement and under the supervision of a faculty member.

EEN399 Cooperative Education
1 credit Fall & Spring Semester & First & Second Summer Session
Practical application of classroom theory through alternating semester or summer employment with firms offering positions consistent with the student's field of study. Course may be repeated.
EEN402 Electrical Energy Conversion
3 credits Fall Semester
Introduction to sources of energy; theory of electromechanical energy conversion, covering transformers, DC and AC rotating machines; introduction to photovoltaic energy conversion, wind energy conversion and fuel cells; and associated laboratory experiments.
PREREQUISITE: EEN 307.

EEN404 Communication Systems
3 credits Spring Semester
Introduction to digital communication, including binary and Mary baseband and band pass modulation over additive white Gaussian noise channels. Optimal receivers, pulse shaping for band limited channels, synchronization, multiple access.
PREREQUISITE: EEN 336 AND EEN/IEN 310.

EEN405 Solid-State Electronics
3 credits Spring Semester
Principles of semiconductor electronics, energy bands of semiconductors, Fermi level, carrier distribution, and transport mechanisms are discussed. Application of semiconductor theory to various junction and field effect devices are included.
PREREQUISITE: EEN 301 AND PHY 207.

EEN414 Computer Organization and Design
3 credits Fall & Spring Semester
Organization and design of computers, hardware description language, instruction set architecture, control unit implementation, microprogramming, memory organization, and high speed arithmetic unit are discussed.
PREREQUISITE: EEN 312

EEN415 Senior Project I
0-1 credits Fall & Spring Semester
Topics cover tasks in project planning including scheduling, documentation, communication (written and oral), financial constraints, and ethics. Students are required to present project proposals to serve as the basis for the follow-up course, EEN 416.
PREREQUISITE: SENIOR STANDING

EEN416 Senior Project II
2 credits Fall & Spring Semester
The capstone design course for Electrical Engineering majors. An electrical system is designed, implemented, and documented.
PREREQUISITE: EEN 415

EEN417 Embedded Microprocessor System Design
2 credits Fall Semester
Study of microcomputer system design, scientific methods for quantifying system performance, embedded controller applications using high level languages, and debugging strategies. Lecture, 1 hour; laboratory, 3 hours.
PREREQUISITE: EEN 218, 315, AND 414.
EEN418 Senior Project Planning
0-1 credits  Fall & Spring Semester
The creative process of devising a product to meet customers' needs including an overview of the design process, analysis of requirements, project planning, scheduling, evaluation, and documentation. Students are required to present project proposals to serve as the basis for the follow-up senior design project.
PREREQUISITE: SENIOR STANDING.

EEN419 Senior Project
2 credits  Fall & Spring Semester
The purpose of this course is to integrate the student's knowledge in hardware, software, and project management. A major digital system is designed, implemented, debugged, and documented.
PREREQUISITE: EEN 418, 417, 454.

EEN421 Introduction to 3D Computer Modeling and Animation
2 credits  Fall Semester
Introduction to the fundamental principles of computer animation with hands-on experience. Focus on 3D modeling, texture mapping, lighting, character animation, inverse kinematics, dynamics, rendering and compositing.
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

EEN422 Advanced 3D Character Design and Motion Capture for Computer Games
2 credits  Spring Semester
Introduction to game development pipeline, from design, conception, modeling, texture mapping, rigging, motion capture and animation, special effects to level design and the pipeline flow control.
PREREQUISITE: EEN 421.

EEN424 SYSTEMS PROGRAMMING
3 credits  Fall Semester
Practical hands-on experience with UNIX systems programming and administration. Programming using shell-scripting languages. File systems features, multiprocessing, inter-process communication, and systems programming fundamentals are discussed.
PREREQUISITE: EEN 218.

EEN435 Communication Electronics
3 credits  Offered By Announcement Only
Design of communication circuits including oscillators, mixers, phase-locked loops, and tuned networks; AM and FM transmitters and receivers.
PREREQUISITE: EEN 306.

EEN436 Introduction to Digital Signal Processing
3 credits  Offered By Announcement Only
Basic principles of digital signal processing are discussed including discrete time systems and signals, z-transform, sampling, frequency response, discrete Fourier transform, Finite and Infinite Impulse Response digital filters, and applications in related fields.
PREREQUISITE: EEN 336.
EEN437 Real-Time Digital Signal Processing Laboratory  
1 credit  
Fall Semester  
Digital signal processing hardware for real-time operation, software development tools, instruction set, and DSP experiments with audio and speech application are discussed.  
PREREQUISITE: PREREQUISITE OR COREQUISITE: EEN 436.

EEN454 Digital System Design and Testing  
2 credits  
Spring Semester  
Functional building blocks and concepts of control and timing in digital design.  
Descriptive techniques for digital systems and design for testability.  
PREREQUISITE: EEN 316.

EEN455 Design-for-Testability Laboratory  
1 credit  
Fall & Spring Semester  
Project laboratory demonstrating the techniques necessary to design, implement, and debug and test a large system. The process is carried through from conceptual design, implementation, integration, simulation, and synthesis on a FPGA chip.  
PREREQUISITE: PREREQUISITE OR COREQUISITE: EEN 454.

EEN499 Senior-Junior Cooperative Education  
1-3 credits  
Fall & Spring Semester & First & Second Summer Session  
Analysis and design experience obtained in industry or government. Approved project jointly supervised and assessed by department faculty and external partner. Note: A maximum of three credits could be used to satisfy degree requirement as Technical Elective. See Bulletin for more information.  
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIR.

EEN500 Engineering Analytical Techniques  
3 credits  
Offered By Announcement Only  
Complex variables, analytic functions, power series, residue theorem, conformal mappings, series solution, Bessel functions, Legendre polynomials. singular value decomposition, vector, and matrix norms are discussed.  
PREREQUISITE: MTH 311.

EEN502 Engineering Acoustics  
3 credits  
Fall Semester  
Introduction to basic principles of acoustics, methods of sound measurement, physiological, psychological acoustics, the acoustics of the major classes of musical instruments and speech, fundamentals of transducers, architectural acoustics, and the effects and control of noise are covered.  
PREREQUISITE: EEN 336 OR PERMISSION OF INSTRUCTOR.

EEN503 Principles of Electro-optics  
3 credits  
Fall Semester  
Principles of optics, optical fibers, electro-optics, and light wave propagation in anisotropic and periodic media, guided waves, and integrated optics are discussed.  
Electro-optic devices including sources and detectors, optical fiber communication, and optics for medical and biomedical applications are also covered.  
PREREQUISITE: PHY 206, 207 AND EEN 301 OR EQUIVALENT.
EEN504 Optics and Fiber Communication
3 credits
Spring Semester
Introduction to optics and fiber communication, light propagation in free space and waveguides, imaging, wave phenomena and diffraction, interferometer, spectrometer, holography, fiber coupling, and fiber communication are covered. Lecture, 1 1/2 hours; laboratory, 3 hours.
PREREQUISITE: EEN 301 OR PREREQUISITE OR COREQUISITE: BME 545.

EEN507 Active Filter Design
3 credits
Spring Semester
Active low pass filter design, gain-tuning and passive-tuning, immittance calculations, high-frequency lowpass filters, frequency and time domain analysis of lowpass, highpass, bandpass, and bandstop filters are discussed. Classical filters and Active filter classification including gain-sensitivity limitations are also included.
PREREQUISITE: EEN 307.

EEN508 Digital Control Systems
3 credits
Offered By Announcement Only
Basic concepts relevant to the analysis and design of digital computer controlled systems. Sampling, z-transform, discrete transfer functions, discrete-time state space modeling, stability, reachability, and observability are discussed. Analysis and design in time and frequency domains, state feedback and observers, optimal control, estimation, and linear quadratic Gaussian design are also included.
PREREQUISITE: EEN 308.

EEN510 Passive Filter Design
3 credits
Offered By Announcement Only
Design of RLC passive filters, properties of positive-real functions, and Brune test are discussed. Design of driving-point and transfer immittances of RC, RL, LC, and RLC one-port and two-port networks are also covered as well as the design of Butterworth, Chebyshev, and elliptic ladder filters.
PREREQUISITE: EEN 307.

EEN511 Software Engineering
3 credits
Spring Semester
Software Development: Specification and analysis, methodologies, management and control. Advanced programming techniques: dynamic programming, fast data retrieval and sorting, enumerators, data structures, and data management. The limits of software engineering, computability and complexity analysis.
PREREQUISITE: EEN 318.

EEN512 Software Engineering and Architecture
3 credits
Spring Semester
PREREQUISITE: EEN 318.

EEN513 Software Design and Verification
3 credits
Spring Semester
PREREQUISITE: EEN 318 AND SENIOR STANDING.
EEN514 Computer Architecture
3 credits                               Spring Semester & First Summer Session
Computer data and instruction types, survey of existing architectures, and the interaction between hardware and software sub-systems are discussed. Advanced topics in computer architecture.
PREREQUISITE: EEN 414.

EEN516 Analog Integrated Circuits
3 credits                               Fall Semester
Analysis and design of analog integrated circuits with emphasis on MOS technology. Design of operational amplifiers, comparators, sample and hold circuits, and voltage references are discussed. Fundamentals of data converters and CAD methods for analog integrated circuits are also covered.
PREREQUISITE: EEN 306.

EEN519 Design of Computing Languages
3 credits                               Offered By Announcement Only
Major features of modern programming languages with emphasis on design and software efficiency. Interaction between language design and the design of its compiler are included.
PREREQUISITE: EEN 218.

EEN521 Computer Operating Systems
3 credits                               Fall Semester
The design and implementation of operating systems. Virtual memory and memory management, resource allocation, device drivers, process creation, control, communications and scheduling, file systems, data protection, security, parallel processing and time-sharing. The class includes a significant operating system implementation project.
PREREQUISITE: EEN 318

EEN532 VLSI Systems
3 credits                               Fall Semester
Fundamentals of MOS Technology in VLSI. System data, control flow, structures, design, layout, mask making, fabrication, packaging, and testing of VLSI chips are discussed. Highly concurrent Very Large Scale Integration computational systems are also covered.
PREREQUISITE: EEN 304 AND 305.

EEN533 Random Signals and Noise
3 credits                               Fall Semester
Probability models, Bayes' theorem, Limit theorems of Laplace and Poisson, functions of random variables, Central limit theorem, conditional expectation and estimation, Stochastic processes, stationary and ergodicity, cross-spectral analysis, filtering, and prediction are discussed.
PREREQUISITE: IEN 310 OR EEN 310.

EEN534 Communication Networks
3 credits                               Fall Semester
Principles of digital communications, Local Area Networks (LANs), Wide Area Networks (WANs), Open systems Intercommunication (OSI), Internet reference models, internet architecture and protocols, packet switching and routing, and network performance are discussed.
PREREQUISITE: EEN 310 OR IEN 310.
University of Miami Bulletin, 2012-2013
Undergraduate Course Listing
COLLEGE OF ENGINEERING
ELECTRICAL & COMPUTER ENGINEERING

EEN536 Digital Signal Processing
3 credits Offered By Announcement Only
Fast Fourier transform, design, implementation, realization of digital filters, finite word length effects, decimation, interpolation, multirate signal processing, and Discrete Hilbert transform are covered. 
PREREQUISITE: EEN 436.

EEN537 Principles of Artificial Intelligence
3 credits Fall Semester
Search techniques, game trees, exhaustive vs. cutoff search, natural language processing, augmented transition networks, knowledge representation, cognitive aspects, semantic networks, problem-solving, expert systems, and AI machines are covered. 
PREREQUISITE: EEN 218.

EEN538 Introduction to Digital Image Processing
3 credits Fall Semester

EEN539 Digital Communications
3 credits Offered By Announcement Only
Principles for the analysis and design of digital communications systems. Nyquist sampling, signal space representation, digital modulation techniques and optimal receiver design, ISI channels, error control coding, convolutional codes, Viterbi decoder, and wireless applications. 
PREREQUISITE: EEN 404

EEN540 Digital Speech and Audio Processing
3 credits Spring Semester
Introduction to human speech production, hearing, and perception. Digital speech and audio signal analysis in time and frequency, speech and audio coding, speech synthesis and recognition, language modeling, design of systems for human-machine interaction are also covered. 
PREREQUISITE: EEN 436 OR CONSENT OF INSTRUCTOR.

EEN542 Digital Integrated Circuits
3 credits Spring Semester
Design and operation of state-of-the art digital integrated circuits. Circuit simulation methods using CAD programs, various TTL, CMOS, ECL, and I2L families are discussed. 
PREREQUISITE: EEN 304, 306.

EEN543 BioNanotechnology
3 credits Spring Semester
PREREQUISITE: MTH 210 OR PERMISSION OF INSTRUCTOR

EEN546 Reliable Digital System Design
3 credits Offered By Announcement Only
Topics include descriptive technique for digital systems, synchronizer failure and metastability estimation, design for testability, and estimating digital system reliability. Computer-Aided Engineering (CAE) tools are also covered. Not open to students with credit in EEN 454. Offered only for Graduate students. 
PREREQUISITE: EEN 316.
EEN548 Machine Learning
3 credits  Offered By Announcement Only
Fundamentals of intelligent system design and strategies of learning capability simulation. Selected case studies of learning systems for engineering applications are included.
PREREQUISITE: EEN 218 AND MTH 309 OR PERMISSION OF INSTRUCTOR.

EEN552 Power Electronics
3 credits  Fall Semester
Analysis and design of solid-state power electronic circuits including DC/DC, AC/DC and DC/AC converters, controller design, power electronics applications, and associated laboratory experiments.
PREREQUISITE: EEN 306, EEN 311

EEN553 Neural Networks
3 credits  Offered By Announcement Only
Artificial neural network algorithms and structures, learning process, perceptron, least-mean-square algorithms, multilayer perceptron, error back-propagation, radial-basis function networks, the Hopfield network, and self-organizing systems are discussed.
PREREQUISITE: IEN 310 OR EEN 310.

EEN555 Microwave Transistor Amplifier Design
3 credits  Fall Semester
Analysis and design of transistor amplifiers and oscillators at microwave frequencies. Scattering parameter methods, stability considerations, matching networks, and narrowband and broadband techniques are discussed. Computer aided design methods for microwave transistor amplifiers are also included.
PREREQUISITE: EEN 306.

EEN562 Wireless and Cellular Communication
3 credits  Fall Semester
Wireless Channel Characterization: path loss, shadowing, fading, frequency-selective channels, Doppler spread, and delay spread. Diversity techniques: frequency, time and space diversity. Multiple Antenna Systems: space-time coding, beam forming and layered space-time system. Digital Modulation: adaptive modulations and Orthogonal Frequency Division Multiplexing (OFDM). Cellular Concept: frequency reuse, co-channel interference and handoff. Multiple Access Methods: Frequency Division Multiple Access (FDMA), Time Division Multiple Access (TDMA), Code Division Multiple Access (CDMA) and random access. CDMA: spreading codes, RAKE receiver, multiuser detection and power control.
PREREQUISITE: EEN 404.

EEN563 Wireless Communication Lab
1 credit  Offered By Announcement Only
Computer simulation of path loss, shadowing and fading in wireless channels, performance of various digital modulation methods in both Gaussian and wireless channels, diversity methods, equalization methods including zero-forcing, minimum mean-square error (MMSE) and decision-feedback equalization (DFE), co-channel interfacing in cellular systems, space-time coding. Orthogonal Frequency Division Multiplexing (OFDM) systems, spreading codes for Code Division Multiple Access (CDMA) systems, and matched-filter receiver and multiuser detector for CDMA systems. Measurement of wireless signals in various environments.
PREREQUISITE: PREREQUISITE OR COREQUISITE: EEN 562.
EEN564 Wireless Networks
3 credits
Introduction of wireless channels and network. Introduction of medium access control: Frequency Division Multiple Access (FDMA), Time Division Multiple Access (TDMA), Code Division Multiple Access (CDMA) and Carrier Sense Multiple Access. Wireless data networks IEEE 802.11 (WiFi), IEEE 802.16 (WiMax) and Bluetooth. Wireless network layer: mobile IP and mobile ad-hoc networks. Wireless transport layer: mobile TCP. Wireless Cellular systems: network structure and call processing of GSM and CDMA systems.
PREREQUISITE: EEN 534 OR 575 OR PERMISSION OF THE INSTRUCTOR

EEN565 Introduction to Information Theory and Coding
3 credits
Offered By Announcement Only
Entropy, conditional entropy, mutual information, source coding, Huffman code arithmetic code, channels and channel capacity, error detection, error correction, and Hamming codes are discussed. An introduction to linear block codes and cyclic codes is included.
PREREQUISITE: IEN 310 OR EEN 310.

EEN567 Database Design and Management
3 credits
Spring Semester
Database systems design, modeling, implementation, management methodologies, and techniques. Different database systems are addressed including relational, object-oriented, object-relational, and distributed database systems. Internet (WWW) technology, data warehousing, and online analytical processing applications of database management systems and hands-on experience with commercial database systems is also included.
PREREQUISITE: EEN 218

EEN568 Internet Computing II
3 credits
Fall Semester
Java programming for client/server networking, multi-threading, database connectivity, and servlets. Principles and practices used for accessing back-end databases through web applications. Use of eXtensible Markup Language (XML) for processing.
PREREQUISITE: EEN 368

EEN570 Network Client-Server Programming
3 credits
Spring Semester
Introduction to server-client systems and programming. Advanced server-client design and implementation based on distributed component object model in Windows and UNIX.
PREREQUISITE: EEN 218 OR EQUIVALENT

EEN571 Interactive Multimedia Computing
3 credits
Spring Semester
Multimedia fundamentals including hardware, software, standards, concepts and issues, compression, decompression, user interface design, query by content and multimedia indexing are discussed.
PREREQUISITE: EEN 318

EEN572 Object-Oriented and Distributed Database Management Systems
3 credits
Offered By Announcement Only
PREREQUISITE: EEN 567 OR EQUIVALENT.
EEN573 Network Computing
3 credits
Spring Semester
PREREQUISITE: EEN 368 AND 567.

EEN574 Agent Technology
3 credits
Offered By Announcement Only
Agent definition and applications, agent modeling, theories, agent representation using KIF (Knowledge Interchange Format), agent behavior, ethical and emotional agents, agent communication languages (KQML (Knowledge Query and Manipulation Language)), agent development environments and tools, agent systems (cooperative agents, interface agents, information agents, learning agents, believable agents, agents for workgroups, mobile agents), and agent case studies are covered.
PREREQUISITE: EEN 537 OR EQUIVALENT.

EEN575 Data Network Design and Management
3 credits
Spring Semester
Networking fundamentals and current technologies. Data network planning, analysis, design, and management techniques. Different network technologies are addressed and contrasted in terms of topology, performance, and scope of real applications. Network management systems are investigated including fault, configuration, security, and performance management. Network management information bases, protocols, and hands-on experience with network equipment and network management systems are also included.
PREREQUISITE: EEN 310 OR IEN 310.

EEN576 Internet and Intranet Security
3 credits
Fall Semester
Security issues and applications for securing internet and intranet-based information exchange. Secure information models, security tools, security services, security protocols, electronic commerce, virtual private networks, firewalls, and security versus cost tradeoffs are covered.
PREREQUISITE: EEN 368.

EEN577 Data Mining
3 credits
Offered By Announcement Only
Introduction to the general principles of inferring useful knowledge from large data sets. Data mining algorithms, including inferring rules, linear regression, decision trees, association rules, and predictive models. Evaluation of data mining algorithms, including training, testing, prediction, comparison, cost, and cross-validation. Data mining applications.
PREREQUISITE: EEN 567 OR EQUIVALENT.

EEN578 E-Commerce Technology
3 credits
Offered By Announcement Only
Tools and techniques providing the foundation for the design, implementation, and deployment of e-commerce systems. Search engines, information retrieval for e-commerce, e-commerce interfacing design, and e-commerce systems case studies are also included.
PREREQUISITE: EEN 368
EEN579 Mobile Computing
3 credits Offered By Announcement Only
Mobile computing and proxy architectures, mobile web protocols, mobile user interfaces, applications, systems-ware adaptations, mobile databases, transactions, data synchronization, privacy, authentication, and security are covered.
PREREQUISITE: EEN 368.

EEN580 Electrical and Computer Engineering Internship
1-3 credits Fall & Spring Semester
Analysis, design, and research experience obtained at an operating and recognized industry. Approved project jointly supervised and assessed by departmental faculty and industrial partner.
PREREQUISITE: PERMISSION OF ADVISOR.

EEN581 Special Problems
1-3 credits Fall Semester
Project course introducing methods of research through an individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

EEN582 Special Problems
1-3 credits Spring Semester
Project course introducing methods of research through an individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

EEN583 Special Problems
1-3 credits First Summer Session
Project course introducing methods of research through an individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

EEN584 Special Problems
1-3 credits Second Summer Session
Project course introducing methods of research through an individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

EEN585 Special Problems
1-3 credits Offered By Announcement Only
Project course introducing methods of research through an individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

EEN586 Multimedia Networking
3 credits Fall Semester
PREREQUISITE: EEN 534 OR 575.
EEN587 Multimedia Databases
1-3 credits
Fall Semester
Introduction to the fundamental concepts and techniques pertinent to multimedia databases. Introduction to a variety of techniques and emerging innovative solutions to represent, store, index, retrieve, integrate, and manipulate data in various media type(s) to construct multimedia databases.
PREREQUISITE: EEN 567 OR PERMISSION OF INSTRUCTOR. PREREQUISITE OR COREQUISITE: EEN 571.

EEN590 Special Topics in Information Technology
1-3 credits
Offered By Announcement Only
Lecture courses in selected areas of specialization within Information Technology.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN591 Special Topics in Information Technology
1-3 credits
Offered By Announcement Only
Lecture courses in selected areas of specialization within Information Technology.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN592 Special Topics in Audio Engineering
1-3 credits
Offered By Announcement Only
Lecture courses in selected areas of specialization within Audio Engineering.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN593 Special Topics in Audio Engineering
1-3 credits
Offered By Announcement Only
Lecture courses in selected areas of specialization within Audio Engineering.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN594 Special Topics in Computer Engineering
1-3 credits
Offered By Announcement Only
Lecture courses in selected areas of specialization within Computer Engineering.
PREREQUISITE: PERMISSION OF INSTRUCTOR - 1 COUPON

EEN595 Special Topics in Computer Engineering
1-3 credits
Offered By Announcement Only
Lecture courses in selected areas of specialization within Computer Engineering.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN596 Special Topics in Computer Engineering
1-3 credits
Offered By Announcement Only
Lecture courses in selected areas of specialization within Computer Engineering.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN597 Special Topics in Electrical Engineering
1-3 credits
Offered By Announcement Only
Lecture courses in selected areas of specialization within Electrical Engineering.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN598 Special Topics in Electrical Engineering
1-3 credits
Offered By Announcement Only
Lecture courses in selected areas of specialization within Electrical Engineering.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
EEN599 Special Topics in Electrical Engineering
1-3 credits Offered By Announcement Only
Lecture courses in selected areas of specialization within Electrical Engineering.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

INDUSTRIAL ENGINEERING
IEN100 Introduction to Industrial Engineering
1 credit First & Second Summer Session
This introductory course is designed to expose high school students to a variety of specific disciplines within the industrial engineering arena to assist them in making informed decisions about possible college majors. The program is designed for the exemplary high school student interested in applied mathematics and science. All students enrolled in this course will gain experience in problem solving, engineering mechanics, computer simulation, and laboratory activity. The course content changes throughout the 3-week duration and includes topics on methods analysis, time studies, engineering financial analysis, energy conservation, human factors engineering, and ergonomics. The students will be provided with an understanding and some hands-on experience on topics relative to the discipline of industrial engineering. Via an introduction to several case histories, the students will be able to understand the challenges associated with the design of systems and processes within different industries and importance of the scientific methods in engineering. The laboratory and field trip experiences will deal with manufacturing processes, biomechanics analysis, simulation, energy conservation, and supply chain processes. Summer Scholar Students only.
PREREQUISITE: SUMMER SCHOLAR STUDENTS ONLY.

IEN111 Introduction to Engineering I
3 credits Fall & Spring Semester
Use of engineering tools and computer techniques for problem solving, data acquisition, analysis, presentation, software design, and computer aided drafting. Development of design skills through several design and building competitions. Introduction to professional ethics, intellectual property, ethics, intellectual property rights, and an introduction to use of MATLAB, AutoCAD, and programming in C++.

IEN112 Introduction to Engineering II
2 credits Spring Semester
Continuation of IEN 111. An overview of Industrial Engineering concepts and issues important to the design and operation of industrial and service systems. Students will learn the use of software tools developed to enhance the Industrial Engineer's ability such as database management, high level programming languages, electronic spreadsheets, and computer graphics.
PREREQUISITE: IEN 111.

IEN201 Methods Analysis and Work Measurement
3 credits Fall & Spring Semester
Design of improved methods for doing work based on effective human effort. Time standardization of productive operations by work measurement, predetermined time systems, and activity sampling are discussed. Tools and charts for methods analysis are discussed and use of Microsoft Visio is emphasized and reviewed.
PREREQUISITE: IEN 111
IEN306 Manufacturing Processes
3 credits  Fall Semester
Basic and applied sciences in processing of materials. Effects of processing on the manufactured parts, selection of processing methods, and their relation with material properties. Contemporary and non-traditional processes used in manufacturing are also covered.
PREREQUISITE: (CHM 111 OR CHM 151) AND PHY 205

IEN310 Introduction to Engineering Probability
3 credits  Fall & Spring Semester
Axioms of probability, discrete and continuous random variables, probability density functions, cumulative distribution function, expectation, conditioning, independence, functions of random variables, multiple random variables, sums of random variables, introduction to statistical analysis, estimation, and hypothesis testing. Cross-listed with EEN 310.
PREREQUISITE: (MTH 162 OR EQUIVALENT) AND JUNIOR STANDING.

IEN311 Applied Probability and Statistics
3 credits  Fall & Spring Semester
Descriptive statistics, basic probability and distribution theory, point and interval estimation, testing hypothesis, simple linear regression, correlation, and quality control charts are discussed. Examples are drawn from various disciplines. Cross-listed with MAS 311.
PREREQUISITE: MTH 162 OR EQUIVALENT

IEN312 Applied Statistical Methods
3 credits  Spring Semester
Linear regression, multiple regression, analysis of variance, and design of experiments are discussed. Cross-listed with MAS 312.
PREREQUISITE: IEN 310 (EEN 310) OR IEN 311 (MAS 311) OR EQUIVALENT.

IEN320 Entrepreneurship for Engineers
3 credits  Offered By Announcement Only
Entrepreneurship as it affects engineering students. How to identify business opportunities, how to obtain financing and sustain a business, and how to take charge of the individual's entrepreneurial goals are covered.

IEN351 Industrial Safety Engineering
3 credits  Fall Semester
Basic principles of accident prevention and safety engineering approach to the design of mechanical equipment, facilities, and manufacturing processes. Analysis and design of fire prevention procedures and accident control procedures in industry are included.
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR.

IEN360 Productivity Engineering
3 credits  Spring Semester
Definitions and scope of productivity engineering and management. The productivity cycle. Productivity measurement, evaluation, improvement--discussion and examples. Productivity planning and improvement through the application of industrial and systems engineering techniques. Discussion of individual techniques with examples. Application potential of the course in real life situations.
PREREQUISITE: MTH 162 OR EQUIVALENT.
IEN361 Industrial Cost Analysis
3 credits
Spring Semester
Analysis of financial statements and cost factors in manufacturing and service systems. Cost accounting methods, job order costing and process costing approaches. Deterministic and probabilistic estimates of cost.
PREREQUISITE: MTH 162 OR EQUIVALENT

IEN363 Project Management for Engineers
3 credits
Spring Semester
This course will help students develop a basic understanding of the key concepts, theories, tools, and methodologies of project management. Students will be introduced to the different phases of managing projects from conception to termination with particular emphasis on planning, scheduling, resource allocation, monitoring and control. The course will utilize a case-study-based approach in analyzing the techniques and methods of project management.
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR

IEN380 Engineering Economy
3 credits
Fall Semester
Engineering Economy Fundamentals. Interest and money-time relationship, methods of making economic decisions, risk and uncertainty, sensitivity analysis, selections among multiple alternatives, depreciation, benefit-cost analysis, replacement studies, minimum cost analysis, and related topics.
PREREQUISITE: MTH 162 OR EQUIVALENT.

IEN399 Internship
1 credit
Fall & Spring Semester & First & Second Summer Session
Practical application of classroom theory through employment with firms offering positions consistent with the student's field of study. Course may be repeated.

IEN406 Computer-Aided Manufacturing
3 credits
Spring Semester
A comprehensive view of manufacturing with a focus on design, automation, and the use of computers in manufacturing. The topics include computer-aided design, communications, programmable logic controllers, CNC machining, industrial robots, process planning, and computer-integrated manufacturing. Laboratory projects are an integral part of the course.
PREREQUISITE: (CHM 111 OR CHM 151) AND PHY 205.

IEN407 Product Design for Manufacturing
3 credits
Spring Semester
The different phases of engineering design process. Guided Iteration Methodology for product design. Topics include design for manufacturing (DFM), best practices of product realization, solid modeling using SolidWorks, quality in design, issues in patents, liability and ethics. Engineering design specifications, evaluation methods for design alternatives.
PREREQUISITE: IEN 406.

IEN441 Deterministic Models in Operations Research
3 credits
Fall Semester
Introduction to deterministic mathematical models with applications to operational problems. Topics include the methodology of operations research, mathematical programming, game theory, network flow-theory, and dynamic programming. Cross-listed with MAS 441.
IEN442 Stochastic Models in Operations Research
3 credits
Spring Semester
Probabilistic models in operations research. Topics include probabilistic inventory models, queuing theory, Markov chains, and probabilistic dynamic programming. Cross-listed with MAS 442.
PREREQUISITE: (IEN 310 (EEN 310) OR IEN 311 (MAS 311)) AND IEN 441 (MAS 441).

IEN462 Production Systems Design
3 credits
Offered By Announcement Only
Recent advances in design and manufacturing including concurrent engineering, design for manufacturability, robust design - Taquchi methods, computer integrated manufacturing, integrated production control, Just-in-Time production systems, group technology, focused factories, flexible manufacturing systems, and agile manufacturing.
PREREQUISITE: IEN 310 (EEN 310) OR IEN 311 (MAS 311).

IEN465 Production and Inventory Control
3 credits
Fall Semester
Production and inventory management techniques such as forecasting methods, inventory control subject to both known and uncertain demand, aggregate planning, introduction to scheduling, materials requirement planning (MRP), just-in-time (JIT) manufacturing, and introduction to scheduling are covered.
PREREQUISITE: IEN 310 (EEN 310) OR IEN 311 (MAS 311).

IEN470 Engineering Professionalism
3 credits
Offered By Announcement Only
Engineering design and configuration management, product warranties and safety, environmental responsibilities, ethics, professionalism, proposal preparation, contracts, execution, project scheduling, engineering economic analysis including present value, net present value, depreciation methods, costs, and financial statements are covered.
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR.

IEN490 Undergraduate Research
1- 3 credits
Fall Semester
Research projects. Individual investigation of current problems

IEN494 Senior Project
0- 3 credits
Fall & Spring Semester
Integration of Industrial Engineering principles and techniques in the design and improvement of production and service systems. Course includes preparation of project proposal, data collection, analysis, reporting, and formal presentations.
PREREQUISITE: SENIOR STANDING.

IEN501 Manufacturing Analysis and Design I
3 credits
Offered By Announcement Only
Analysis of Production Systems stressing diagnosis of problems associated with work measurement, manufacturing methodologies, and their interaction with cost factors.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

IEN502 Manufacturing Analysis and Design II
3 credits
Offered By Announcement Only
Analysis of production systems stressing diagnosis of problems of quality and production control, utilizing quantitative techniques and analytical methods.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
IEN505 Robotics
3 credits
Fall Semester
Fundamentals of robotics including kinematics and dynamics, trajectory planning, sensors and actuators, robotic vision, and case studies. Building your own robot is an integral part of hands-on laboratory exercises. Matlab control toolbox and image analysis toolbox will be extensively used for design and analysis.
PREREQUISITE: IEN 406.

IEN507 Design of Manufacturing Systems
3 credits
Spring Semester
State-of-the-art techniques and tools relevant to the design, analysis, and control of modern manufacturing systems. Topics include modeling of manufacturing systems, tools for manufacturing system analysis, manufacturing system planning and scheduling, and lean manufacturing systems.
PREREQUISITE: IEN 465 OR PERMISSION OF INSTRUCTOR.

IEN509 Automated Assembly
3 credits
Fall Semester
Fundamentals of automated assembly including parts transfer systems and feeders, parts orientation and grasping techniques, product design for automated assembly (DFA), assembly robots, and performance and economics of assembly systems.
PREREQUISITE: IEN 406 OR PERMISSION OF INSTRUCTOR.

IEN512 Statistical Quality Control and Quality Management
3 credits
Spring Semester
This course addresses the concepts, theories, tools and methodologies employed in the management and improvement of quality. The course examines many of the advance topics in statistical quality control including control charts and process capability studies, acceptance sampling, as well as Quality Function Deployment (QFD) and introduction to reliability. Also covered in the course are Lean Six Sigma methodology, tools and concepts.
PREREQUISITE: IEN 311 (MAS 311) OR IEN 312 (MAS 312).

IEN513 Quality Management in Service Organizations
3 credits
Fall Semester
Course examines the issues of quality and productivity management in the service sector. Topics covered include the development and use of questionnaires, service industry applications of quality such as in banking, insurance, healthcare, transportation, government, public utilities, and retail trade.
PREREQUISITE: SENIOR STANDING OR PERMISSION OF INSTRUCTOR.

IEN524 Decision Support Systems in Industrial Engineering
3 credits
Spring Semester
Theory and application of decision support systems in industrial engineering. Topics include the study of model-based, data-based, knowledge-based, and communication-based decision support systems. Emphasis is placed on the selection process of the appropriate systems for various decision problems in industrial environments.
PREREQUISITE: SENIOR STANDING OR PERMISSION OF INSTRUCTOR.

IEN547 Computer Simulation Systems
3 credits
Spring Semester
Computer simulation and the development of simulation models. Application of discrete and continuous system simulation languages to systems studies is also included.
PREREQUISITE: IEN 442 (MAS 442) OR PERMISSION OF INSTRUCTOR.
IEN551 Accident Prevention Systems
3 credits
Spring Semester
Introduction to the basic principles of accident prevention and how to apply the safety engineering approach to the design of industrial accident prevention systems.
PREREQUISITE: IEN 351 OR PERMISSION OF INSTRUCTOR.

IEN557 Ergonomics and Human Factors Engineering
3 credits
Fall Semester
The study of human capacities and limitations with emphasis on human performance in system design. Topics include design of displays and controls, workload, job design, human information processing, anthropometry, workplace design, biomechanics, task analysis, and research techniques in human factors engineering. Lecture, 3 hours.
PREREQUISITE: IEN 312 (MAS 312) OR PERMISSION OF INSTRUCTOR.

IEN558 Industrial Hygiene I
3 credits
Fall Semester
Recognition of occupational chemical health hazards. Evaluation methods and analytical procedures used to determine level of exposure to chemical and toxic hazards. Control measures and compliance with OHSA requirements with special emphasis on industrial ventilation, and other methods of control are included.
PREREQUISITE: ((CHM 111 OR CHM 151) AND SENIOR STANDING) OR PERMISSION OF INSTRUCTOR.

IEN559 Industrial Hygiene II
3 credits
Spring Semester
Recognition of physical occupational health hazards and evaluation methods and instruments used in measuring exposure levels with special emphasis on physical hazards. Protective measures and compliance with OHSA requirements is also included. Lecture, 3 hours.
PREREQUISITE: ((CHM 111 OR 151) AND SENIOR STANDING) OR PERMISSION OF INSTRUCTOR.

IEN565 Design of Integrated Manufacturing Systems
3 credits
Offered By Announcement Only
The design of integrated manufacturing systems including concepts of production planning and control, forecasting techniques, inventory systems, production planning and scheduling methods, material requirement planning, plant layout and facility location, design principles of material handling, new trends in batch, and discrete-parts are discussed.
PREREQUISITE: SENIOR STANDING OR PERMISSION OF INSTRUCTOR.

IEN568 Materials Handling and Facilities Planning
3 credits
Spring Semester
Analysis and design of production and service facilities, emphasis on material handling requirements. Capacity requirements, facility location, layout, storage systems and warehousing are discussed.
PREREQUISITE: SENIOR STANDING OR PERMISSION OF INSTRUCTOR.

IEN570 Engineering Management
3 credits
Spring Semester
Integrating engineering discipline into the social and economic considerations of managing systems. Tools and techniques used by engineering managers including engineering project life cycle, role playing, communication, decision-making in engineering management, and managing change in engineering organizations are discussed.
PREREQUISITE: IEN 311 (MAS 311) OR IEN 312 (MAS 312) OR PERMISSION OF INSTRUCTOR.
IEN571 Engineering Entrepreneurship  
3 credits  
Fall Semester  
The conversion of technological know-how and engineering theories into business enterprises. The role of technology in creating wealth, connecting technology with market, the role and characteristics of entrepreneurs, starting a business and the business plan, innovation, industrial and service organizations, and the new business environment.  
PREREQUISITE: SENIOR STANDING OR PERMISSION OF INSTRUCTOR.

IEN572 Management of Technological Innovation  
3 credits  
Fall Semester & Second Summer Session  
Engineering, Science and Management Principles contributing to the development of a successful framework for Managing technology with an organization, nationally or internationally. The process of technological innovations, technological, planning and forecasting, and socio-economic changes. Prerequisite: Senior or graduate standing.  
PREREQUISITE: SENIOR STANDING OR PERMISSION OF INSTRUCTOR.

IEN590 Special Topics in Industrial Engineering  
1-3 credits  
Offered By Announcement Only  
Sub-titles describing the topics are shown in parentheses in the class schedule, following the title "Special Topics".  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

IEN591 Dean's Seminar: Entrepreneurship  
1 credit  
Offered By Announcement Only  
Weekly seminar given by guest speakers on topics including process of management, marketing, planning, R & D, financing, taxation, governmental regulations, and international commerce.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

IEN594 Master's Capstone Design Project  
0-3 credits  
Fall Semester  
A capstone design project for students in the five-year BSIE/MSIE program. Integration of Industrial Engineering principles and techniques in the design and improvement of production and service systems is emphasized. Offered for students in this program only.  
PREREQUISITE: METHODS ANALYSIS, APPLIED PROBABILITY AND STATISTICS AND SENIOR STANDING.

IEN595 Special Problems  
1-3 credits  
Offered By Announcement Only  
Project course introducing methods of research through an individual investigation of current problems. Offered by special arrangement only.  
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

IEN596 Special Problems  
1-3 credits  
Offered By Announcement Only  
Project course introducing methods of research through an individual investigation of current problems. Offered by special arrangement only.  
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.
IEN599 Cooperative Education
1 credit Offered By Announcement Only
Practical application of classroom theory through alternating semester or summer employment with industries offering positions consistent with the student's field of study. Course may be repeated. Periodic reports and conferences are required.

MECHANICAL & AEROSPACE ENGINEERING

MAE100 Introduction to Mechanical and Aerospace Engineering
3 credits Second Summer Session
Basic principles of automobile engines and engine efficiency. Introduction to robots and controls. Basic concepts of solar engineering and solar energy utilization. Principles of fuel cells and hydrogen energy. Introduction to aerospace engineering including the aspects of aerodynamics, propulsion and flight dynamics. Introduction to Aerodynamics of air planes and rockets.
PREREQUISITE: SUMMER SCHOLAR STUDENTS ONLY

MAE111 Introduction to Engineering I
3 credits Fall & Spring Semester
Use of engineering tools and computer techniques for problem solving. Data acquisition, analysis, presentation, software design, and computer aided drafting are covered. Development of design skills through several design and building competitions. Introduction to professional ethics and intellectual property rights. Introduction to use of MATLAB, AutoCAD, and programming in C++.

MAE112 Introduction to Engineering II
0-2 credits Fall & Spring Semester
Introduction to engineering design and the design process. Course topics include safety, reliability, human and environmental factors, economic analysis, and cost estimation. Professional ethics, product liability, solid modeling, machine shop orientation, and practice are also included. Group design projects.
PREREQUISITE: MAE 111.

MAE119 Energy and Environment
3 credits Fall Semester
Conventional energy systems; environmental problems caused by energy carriers and energy consumption; the greenhouse effect, acid rain, and pollution; need for cleaner energy sources; environmental and other characteristics of unconventional energy sources; synthetic energy carriers and their environmental characteristics; possible solutions to energy available and related environmental problems; solar-hydrogen energy system.
PREREQUISITE: FRESHMAN STANDING.

MAE202 Dynamics
3 credits Fall & Spring Semester
Discussion of motion description and analysis, application of Newton's laws, energy, and momentum principles to mechanical systems. Introduction to mechanical vibrations. Co requisite: PHY 205.

MAE207 Mechanics of Solids II
3 credits Fall & Spring Semester
Discussion of displacements, instability, flexural, shear, torsional, and principle stresses. Introduction to statically indeterminate analysis.
MAE241 Measurements Laboratory
0-3 credits Fall Semester
Introduction to experimental mechanical engineering. Basic principles of measurement, data interpretation, and uncertainty analysis are covered. Laboratory exercises in mechanical engineering areas are included. Co requisite: EEN 201 or 205.
PREREQUISITE: MAE 207, IEN 311, ENG 107.

MAE301 Engineering Materials Science
3 credits Fall & Spring Semester & First Summer Session
Introduction to the physics and chemistry of the solid state including the structure and properties of metals, polymers, and ceramics. Co requisite: PHY 207.
PREREQUISITE: PHY 207

MAE302 Mechanical Behavior of Materials
0-3 credits Fall Semester
Application of metallurgy and mechanics to the study of the plastic deformation and fracture of metals, ceramics, and plastics. Lecture, 2 hours; laboratory, 3 hours.
PREREQUISITE: MAE 207.

MAE303 Thermodynamics I
3 credits Fall & Spring Semester & First Summer Session
Thermodynamic properties of materials; the first and second laws of thermodynamics; application to thermodynamic processes; introduction to heat transfer.
PREREQUISITE: PHY 206, MTH 112 OR 132

MAE304 Kinematic Design
3 credits Spring Semester
Fundamentals of kinematic analysis and design of motion of linkages, cams, and gears are discussed. Analysis of forces in linkages, cams and gears is also included.

MAE308 Thermodynamics II
3 credits Spring Semester
Course topics include cycle irreversibility, availability of energy, power and refrigeration cycles, behavior of mixtures and solutions, chemical thermodynamics, and compressible fluids.
PREREQUISITE: MAE 303.

MAE309 Fluid Mechanics
3 credits Fall & Spring Semester & First Summer Session
Course topics include fluid statics, fluid flow concepts, dynamics of inviscid and viscous fluids, closed and open channel flow, and compressibility effects.
PREREQUISITE: CAE 210, PHY 206.

MAE310 Heat Transfer
3 credits Fall & Spring Semester
Application of elementary methods of solution to heat transfer problems involving steady and unsteady state conduction, radiation, and convection. Introduction of meaningful experimental data is also included.
PREREQUISITE: MAE 303.
MAE311 Mass Transfer I  
3 credits  
Offered By Announcement Only  
Introduction to mass transfer phenomena and mass transfer operations in gas-liquid systems. Derivation and application of mass transfer rate equations and simultaneous heat and mass transfer phenomena are also included.  
PREREQUISITE: MAE 303, 309.

MAE341 Mechanical Design I  
3 credits  
Fall Semester  
Concepts and software for kinematics, solid modeling, and project management. Fundamentals of mechanical design: stresses in and failure of mechanical elements. Individual and group design projects.  
PREREQUISITE: MAE 202, 207.

MAE342 Mechanical Design II  
3 credits  
Spring Semester  
Review of the design process and creativity in design. Topics include design and reliability oars, shafts, etc. Individual and group design projects are included.  
PREREQUISITE: MAE 341.

MAE351 Mechanics Laboratory  
0-2 credits  
Spring Semester  
Exercises in the experimental determination of the mechanical properties of materials and the static and dynamic characteristics of mechanical and structural elements. Lecture, 1 hour; laboratory, 3 hours.  

MAE362 Computer Analysis of Mechanical and Aerospace Engineering Problems  
3 credits  
Spring Semester  
Exploration of physical systems behavior using discrete models. Topics include numerical analysis, solid modeling, and software evaluation. Students solve engineering problems using student-developed and existing software. Co requisite: MAE 310.  
PREREQUISITE: MAE 111, 341 AND MTH 211. COREQUISITE: MAE 310.

MAE371 Aerodynamics  
3 credits  
Spring Semester  
Course discusses the history of flight. Topics include fundamental variables, the atmosphere, basic equations, their approximations, compressibility, viscosity, flow regimes potential flow, and aerodynamics of airfoil and wing.  
PREREQUISITE: MAE 309.

MAE399 Cooperative Education  
1 credit  
Fall & Spring Semester & First & Second Summer Session  
Practical application of classroom theory through alternating semester or summer employment with firms offering positions consistent with the student's field of study. Course may be repeated.

MAE404 Experimental Engineering Laboratory  
0-2 credits  
Fall Semester  
Experimental analysis of problems in fluid mechanics, thermodynamics, and other areas of engineering. Lecture, 1 hour; laboratory, 3 hours.  
PREREQUISITE: MAE 303, 309, 310.
MAE405 Thermal Environmental Engineering
3 credits Fall Semester
An extension of basic thermodynamics to the design of engineering systems exposed to various thermal environments. Topics include fundamentals of air conditioning, special refrigeration systems, solar radiation, and thermal analysis of engineering components.
PREREQUISITE: PREREQUISITE OR COREQUISITE: MAE 308, 310.

MAE408 Heating, Ventilating, and Air Conditioning
3 credits Spring Semester
Principles and procedures for the analysis and design of heating, ventilating and air conditioning (HVAC) systems, including moist air properties and conditioning processes, heating and cooling load calculations, building energy consumption, thermal comfort, and indoor air quality. Not available for students having taken MAE 405.
PREREQUISITE: MAE 303.

MAE410 Engineering Administration
2 credits Fall Semester
Course topics include engineering economics, cost determination, legal phases of engineering, and engineering procedures. Lecture, 2 hours.
PREREQUISITE: IEN 311 AND JUNIOR STANDING.

MAE412 System Dynamics
3 credits Fall Semester
Course topics include dynamic modeling of mechanical and thermo-fluid systems. Laplace transforms, transfer functions, energy concepts, causality, linearity, linear graph models, energy transducing system elements, frequency domain methods.
PREREQUISITE: EEN 201 OR 205, MAE 202, 309.

MAE415 Automatic Control
3 credits Spring Semester
Introduction to system theory, transfer functions, and state space modeling of physical systems. Course topics include stability, analysis and design of PID, Lead/Lag, other forms of controllers in time and frequency domains, root locus Bode diagrams, gain and phase margins, Nichols chart, Nyquist criterion, and systems with time delay.
PREREQUISITE: SENIOR STANDING

MAE420 Applied Thermodynamics
3 credits Spring Semester
PREREQUISITE: MAE 303.

MAE441 Design of Fluid and Thermal Systems
3 credits Fall & Spring Semester
Course topics include thermal and fluid systems design fundamentals, piping systems, selection of pumps, piping system design practices, classification of heat exchanges. Basic design methods of heat exchange equipment is also included.
PREREQUISITE: MAE 309, 310.
MAE442 Capstone Design Project-I
0-1 credits
Fall & Spring Semester
Lectures and classroom discussions cover (i) legal, ethical, and societal responsibilities of engineers, (ii) design factors such as product safety, reliability, life cycle costs, and manufacturability, and (iii) other aspects such as global market, contemporary issues, and continuous learning process. Students are required to select group design projects from the breadth of mechanical engineering activity and present project to serve as the basis for MAE 443.
PREREQUISITE: SENIOR STANDING IN MECHANICAL ENGINEERING.

MAE443 Capstone Design Project-II
0-2 credits
Fall & Spring Semester
Continuation of the Capstone Design Project-I course. A mechanical system is designed, implemented, documented, and presented.
PREREQUISITE: MAE 442.

MAE444 Capstone Aerospace Design Project-I
0-1 credits
Fall & Spring Semester
Lectures and classroom discussions cover (i) legal, ethical and societal responsibilities of engineers, (ii) design factors such as product safety, reliability, life cycle costs and manufacturability, and (iii) other aspects such as global market, contemporary issues and continuous learning process. Students are required to select group design projects from the breadth of aerospace engineering activity and present project proposals to serve as the basis for MAE 445.
PREREQUISITE: SENIOR STANDING IN AEROSPACE ENGINEERING.

MAE445 Capstone Aerospace Design Project-II
2 credits
Fall & Spring Semester
Continuation of the Capstone Aerospace Design Project-I course. An aerospace system/subsystem is designed, implemented, documented and presented.
PREREQUISITE: MAE 444.

MAE446 Aircraft Design
3 credits
Fall Semester
Concepts of aircraft design emphasizing on design layout including the airfoil geometry selection, propulsion integration, configuration layout, payload and landing gear system. Co requisite: MAE 471.
PREREQUISITE: PRE- OR CO-REQUISITE: MAE 471

MAE470 Introduction to Aerospace Structures
3 credits
Spring Semester
Course topics include mechanics of thin-walled aerospace structures, load analysis, virtual work, energy principles, stability of aerostructures, and finite element methods.
PREREQUISITE: MAE 207.

MAE471 Flight Dynamics
3 credits
Fall Semester
Course topics include aerodynamic performance, stability, control, propulsion systems, and structures. Case Studies of Aerospace Systems are also included.
PREREQUISITE: MAE 371.
MAE472 Design of Aerospace Structures
3 credits Fall Semester
Design Philosophy and principles of aerospace structures. Detailed design of wing box structure, fuselage, landing gear mechanism, fasteners and structural joints. Application of composite materials.
PREREQUISITE: MAE 470.

MAE490 Undergraduate Research
1-3 credits Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: PERMISSION OF THE INSTRUCTOR

MAE501 Methods of Engineering Analysis
3 credits Fall Semester
Analysis of engineering systems in equilibrium and motion. Examples considered from mechanical, electrical, thermal and fluids engineering. Mathematical theory and computer methods for obtaining numerical solutions are developed for various cases involving discrete and continuous systems. Lecture, 3 hours.
PREREQUISITE: MAE 412, MTH 311 OR PERMISSION OF THE INSTRUCTOR

MAE502 Vibrations
3 credits Fall Semester
Basic theory of free and forced vibrations of mechanical systems with and without damping. Applications to systems with one and several degrees of freedom are included.
PREREQUISITE: MAE 202, 207, 412 OR PERMISSION OF INSTRUCTOR

MAE503 Internal Combustion Engines
3 credits Fall Semester
Course discusses engine types, characteristics, and operation. Topics include performance factors, fuel combustion, power cycles, knock and engine variables, exhaust emissions, fuel metering, compressors, and turbines.
PREREQUISITE: MAE 303, SENIOR STANDING, OR PERMISSION OF INSTRUCTOR.

MAE505 Design for Manufacturability
3 credits Offered By Announcement Only
Manufacturing concerns at design stage. Design theory and methodology. Statistical considerations in geometric dimensioning, tolerances, reliability-based design, and quality control. Producibility, design for assembly, and value engineering. Life cycle costs and optimum design using nonlinear programming and Taguchi approaches. Hands on projects on machine tools.
PREREQUISITE: MAE 341 AND 342 OR CONSENT OF INSTRUCTOR

MAE506 Nuclear Engineering
3 credits Offered By Announcement Only
Course topics include a review of neutron physics, chain reactions, reactor theory, steady state operation, and reactor kinetics. Control, long term reactivity changes, materials, heat transfer, and shielding are also included. Lecture, 3 hours.
PREREQUISITE: SENIOR STANDING IN MECHANICAL AND AEROSPACE ENGINEERING OR PERMISSION OF INSTRUCTOR

MAE507 Advanced Mechanics of Solids
3 credits Spring Semester
Course discusses the basic elements of elasticity, plasticity, and viscoelasticity. Application to mechanical systems at rest and in motion are included.
PREREQUISITE: MAE 202, 207, SENIOR STANDING OR PERMISSION OF INSTRUCTOR.
MAE508 Intermediate Heat Transfer

3 credits
Spring Semester
Course discusses steady and unsteady heat transfer by conduction, convective heat transfer in laminar and turbulent fluid flow, natural convection, and heat transfer by radiation.
PREREQUISITE: MAE 310.

MAE509 Hydrogen Energy

3 credits
Fall Semester
Evaluation of new energy sources, need for an intermediary system, hydrogen energy system, hydrogen as energy carrier, hydrogen production methods, hydrogen storage and distribution, utilization of hydrogen by residential, commercial, transportation, and industrial sectors are discussed as well as environmental, safety, and economical considerations.
PREREQUISITE: SENIOR STANDING OR PERMISSION OF INSTRUCTOR.

MAE510 Fundamentals of Solar Energy Utilization

3 credits
Spring Semester
Fundamentals basic to the design and performance analysis of thermal systems for the capture and utilization of Solar Energy.
PREREQUISITE: MAE 303, MTH 211 AND PHY 207.

MAE511 Engineering Fracture Mechanics

3 credits
Offered By Announcement Only
Course addresses the consequence of fracture including some illustrative applications of fracture mechanics, Griffith’s fracture theory, review of relevant results from solid mechanics, the three basic modes of fracture, stress intensity factor, introduction to elasto-plastic and dynamic fracture, fatigue crack propagation, fracture and non-destructive evaluation procedures.
PREREQUISITE: MAE 207, SENIOR STANDING OR PERMISSION OF INSTRUCTOR.

MAE512 Intermediate Fluid Mechanics

3 credits
Fall Semester
Course topics include conservation of mass, momentum, and energy, potential flow, viscous laminar and turbulent flows, the Reynolds analogy, and Boundary-layer approximations. Gas dynamics are also discussed.
PREREQUISITE: MAE 309.

MAE513 Kinematics for Robotics

3 credits
Offered By Announcement Only
Geometry of unconstrained plane motion with applications to linkage design. Topics include type and number synthesis, introduction to 3-D mechanism with applications to robotics, graphical, analytical, and computer techniques, including the use of analysis software.
PREREQUISITE: MAE 202, SENIOR STANDING, OR PERMISSION OF INSTRUCTOR.

MAE514 Advanced Internal Combustion Engines Experimental Studies

3 credits
Spring Semester
Experimental mechanical engineering as it pertains to internal combustion engines. The principal measurements necessary to analyze the operation of an internal combustion engine are covered. Emphasis is placed on experiment planning, data interpretation, and error analysis.
PREREQUISITE: MAE 503 OR PERMISSION OF INSTRUCTOR.
MAE516 Introduction to Composite Materials
3 credits
Offered By Announcement Only
Course provides an introduction to composite materials and terminology. Topics include advantages offered by composite materials, current aerospace, automotive, and bio-mechanics applications, experimental results, analytical models, and effects of impact and fatigue loads. The environment's impact on composite materials' performance and design procedures are discussed. Case studies examining composite materials as efficient replacements are also included.
PREREQUISITE: MAE 207, SENIOR STANDING, OR PERMISSION OF INSTRUCTOR.

MAE517 CAD Applications Using Interactive Computer Graphics
3 credits
Offered By Announcement Only
Computer methods and graphics in the engineering design process. Introduction to available engineering analysis codes, principles of computer graphics, and interactive graphical methods in problem solving. Mathematics for 2-D and 3-D graphical manipulation. Programming project work is required.
PREREQUISITE: SENIOR STANDING OR PERMISSION OF INSTRUCTOR.

MAE518 Chemical and Process Engineering A
3 credits
Offered By Announcement Only
Course analyzes single and multi-stage concentration processes in the liquid-solid systems such as crystallization and drying. Processes apart from equilibrium, controlled diffusion, mathematical treatment, and equipment design are also discussed.
PREREQUISITE: MAE 310, 311. COREQUISITE: MAE 508.

MAE519 Chemical and Process Engineering B
3 credits
Offered By Announcement Only
Stagewise equilibrium separation processes in liquid-liquid systems such as distillation, rectification, absorption, and extraction. Application of phase equilibria and balance equations, mathematical treatment, and equipment design.
PREREQUISITE: MAE 310, 311, 308.

MAE520 Air Pollution
3 credits
Spring Semester
Course topics include fundamentals of air pollution, air quality, properties of air pollutants, effect of pollutants on the environment, analysis and modeling, diffusion of pollutants, and air pollution control.
PREREQUISITE: MAE 303, 309/CAE 330 OR PERMISSION OF INSTRUCTOR.

MAE521 Exhaust Emission Control
3 credits
Spring Semester
Course topics include automotive emissions, air pollution, combustion of homogeneous mixtures, emission control systems, Federal emission standards, and emission instrumentation and measurement. Lecture, 2 hours; Laboratory, 3 hours.
PREREQUISITE: SENIOR ENGINEERING STANDING OR PERMISSION OF INSTRUCTOR.

MAE528 Fuel Cells
3 credits
Spring Semester
Introduction to fuel cells, thermodynamics of fuel cells, electrochemical kinetics in fuel cells, transport phenomena in fuel cells, introduction to various types of fuel cells.
PREREQUISITE: CHM 151 AND MAE 303
MAE538 Computer-Aided Air Conditioning Design and Energy Management
3 credits Offered By Announcement Only
Course topics include equipment and components, air conditioning system, all-air systems, air-and-water systems, all water systems, heat recovery systems, cogeneration systems, heat pump systems, central heating and cooling, energy management, and computer applications.
PREREQUISITE: MAE 405 OR 408 OR PERMISSION OF INSTRUCTOR.

MAE539 Heating, Ventilating and Air Conditioning System Design
3 credits Fall Semester
Course topics include basic HVAC systems, multizone systems, dual-duct systems, terminal reheat systems, variable air volume systems, induction and induction reheat systems, special applications, hydronic systems, unitary and heat pump systems, hydronic heat recovery systems, cooling and heating load calculation duct and piping design, overall system design, and integration.
PREREQUISITE: MAE 405 OR 408 OR PERMISSION OF INSTRUCTOR.

MAE540 Energy Conversion
3 credits Spring Semester
Course topics include energy conversion, utilization, present and projected consumption of energy, thermodynamic principles, nuclear energy, fission and fusion reactions, hydroelectric power, and solar energy. Alternative energy sources, the hydrogen economy, and the energy-environment-economy system are also discussed.
PREREQUISITE: SENIOR STANDING IN MECHANICAL AND AEROSPACE ENGINEERING OR PERMISSION OF INSTRUCTOR.

MAE541 Two-Phase Flow Fundamentals and Design
3 credits Offered By Announcement Only
Course topics include two-phase flow fundamentals for thermal design, heat transfer, and pressure drop analysis of two-phase flows in tube and around tube bundles, heat transfer design correlations in boiling, evaporation, and condensation. Classifications of heat vapor generation and vapor condensation, heat exchangers for air-conditioning and refrigeration, enhancement of boiling; condensation, evaporation heat transfer, and fouling of heat exchangers are also discussed. Design examples are included.
PREREQUISITE: MAE 303 AND 310 OR PERMISSION OF INSTRUCTOR.

MAE550 Product Safety Engineering
3 credits Offered By Announcement Only
Product safety for the designer and the design review process. Topics include hazard analysis of products including use of regulatory and voluntary standards and analytical tools such as fault tree analysis. Constraints imposed by product liability law, design techniques, and process requirements to minimize hazards are also discussed.
PREREQUISITE: SENIOR STANDING IN ENGINEERING OR PERMISSION OF INSTRUCTOR.

MAE551 Special Problems
1-3 credits Fall & Spring Semester & First & Second Summer Session
Project course introducing methods of research through an individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.
MAE552 Special Problems
1-3 credits Fall & Spring Semester & First & Second Summer Session
Project course introducing methods of research through an individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

MAE570 Aero Propulsion
3 credits Fall Semester
Definition of the atmosphere, propulsion basics, rocket fundamentals, turbine fundamentals, gas turbine cycles, component matching, math and computer models, aircraft missions, cycle section, reliability, and durability are analyzed.
PREREQUISITE: MAE 303, 309.

MAE571 Introduction to Aerospace Control
3 credits Spring Semester
Course topics include modeling of Aerospace systems, properties of state space realizations, coordinate transforms solution of state equations, controllability, observability, equivalent realizations, model reduction, stability, optimal control, and estimation.
PREREQUISITE: MAE 415 OR PERMISSION OF INSTRUCTOR

MAE590 Special Topics
1-4 credits Fall Semester
Subtitles describing the topics will be shown in parentheses in the class schedule, following the "Special Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAE591 Special Topics
1-4 credits Offered By Announcement Only
Subtitles describing the topics will be shown in parentheses in the class schedule, following the "Special Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAE592 Special Topics
1-4 credits Offered By Announcement Only
Subtitles describing the topics will be shown in parentheses in the class schedule, following the "Special Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAE593 Special Topics
1-4 credits Offered By Announcement Only
Subtitles describing the topics will be shown in parentheses in the class schedule, following the "Special Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAE594 Special Topics
1-4 credits Offered By Announcement Only
Subtitles describing the topics will be shown in parentheses in the class schedule, following the "Special Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.
MAE595 Special Topics
1- 4 credits
Offered By Announcement Only
Subtitles describing the topics will be shown in parentheses in the class schedule, following the "Special Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAE596 Special Topics
1- 4 credits
Offered By Announcement Only
Subtitles describing the topics will be shown in parentheses in the class schedule, following the "Special Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAE597 Special Topics
1- 4 credits
Offered By Announcement Only
Subtitles describing the topics will be shown in parentheses in the class schedule, following the "Special Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAE598 Special Topics
1- 4 credits
Offered By Announcement Only
Subtitles describing the topics will be shown in parentheses in the class schedule, following the "Special Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAE599 Cooperative Education
1 credit
Fall & Spring Semester & First & Second Summer Session
Practical application of classroom theory through alternating semester or summer employment with industries offering positions consistent with the student's field of study. Course may be repeated. Periodic reports and conferences are required.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.
### ATM102 Introduction to Weather and Climate
3 credits  
Spring Semester

### ATM103 Survey of Modern Meteorology
3 credits  
Fall Semester  
PREREQUISITE: MTH 108

### ATM118 Current Weather Topics
1 credit  
Spring Semester

### ATM120 Topics in Broadcast Meteorology
1 credit  
Fall Semester  
PREREQUISITE: MSC/ATM 103 AND 118 OR PERMISSION OF INSTRUCTOR

### ATM220 Global Climate Change
3 credits  
Fall Semester  
PREREQUISITE: MSC/ATM 103, GSC110 OR GEG 120

### ATM243 Weather Forecasting
3 credits  
Fall Semester  
PREREQUISITE: MSC/ATM 103, MTH 108

### ATM303 Meteorological Instrumentation
3 credits  
Spring Semester  
PREREQUISITE: MSC/ATM 103; PHY 101 OR 205

### ATM305 Atmospheric Thermodynamics
3 credits  
Fall Semester  
PREREQUISITE: MSC/ATM 103; PHY205; COREQUISITE MTH310

### ATM306 Advanced Principles in Broadcast Meteorology
3 credits  
Spring Semester  
PREREQUISITE: MSC/ATM 120 OR PERMISSION OF INSTRUCTOR

### ATM307 Introduction to the Physics of Climate
3 credits  
Spring Semester  
PREREQUISITE: MSC/ATM 305

### ATM321 Scientific Programming in the Atmospheric Sciences
3 credits  
Spring Semester  
PREREQUISITE: MSC/ATM 103 OR CSC 120; MTH 162; MTH 210

### ATM371 Readings in Atmospheric Science
1- 2 credits  
Fall & Spring Semester  
PREREQUISITE: PERMISSION OF FACULTY

### ATM405 Atmospheric Dynamics I
3 credits  
Spring Semester  
PREREQUISITE: MSC/ATM 305; COREQ MTH 513

### ATM406 Atmospheric Dynamics II
3 credits  
Fall Semester  
PREREQUISITE: MSC/ATM 405
ATM407 Weather Analysis
3 credits
PREREQUISITE: MSC/ATM 305
Fall Semester

ATM409 Physical Meteorology
3 credits
PREREQUISITE: MSC/ATM 305
Spring Semester

ATM411 Projects in Atmospheric Science
1-3 credits
PREREQUISITE: ATM 371, PERMISSION OF COORDINATOR
Fall & Spring Semester

APPLIED MARINE PHYSICS

AMP402 Introduction to Ocean Engineering
3 credits
Fall Semester
History and development of major fields within Ocean Engineering. Introduction to analytical and experimental techniques in coastal and harbor engineering, offshore structures, ships and ship dynamics, underwater technology, and underwater acoustics. Lectures will be supplemented by films.
PREREQUISITE: MTH 311, OR PERMISSION.

AMP509 Coastal Physics and Engineering
3 credits
Spring Semester
Course addresses linear wave theory, wave statistics, wave generation, tides, wind-driven currents, nearshore circulation, sediment transport by waves and currents, bedforms, bedload, and suspended load. Other topics include longshore and cross-shore transport, equilibrium beach profiles, coastal processes models, Pelnard-Considere model for shoreline change, and Escoffier model for inlet stability.
PREREQUISITE: CAE 330 OR AMP 575.

AMP531 Ocean Measurements
3 credits
Spring Semester
Course topics include instrumentation, automatic data acquisition and analysis, time series analysis, signals and noise, filtering, and applied statistics.
PREREQUISITE: MTH 311.

AMP535 Introduction to Underwater Acoustics
3 credits
Spring Semester
Course topics include sound waves and pulses, harmonic analysis, sound propagation in the ocean, sonar systems, scattering and absorption, acoustic measurement of marine life and sea-floor properties, sound transmission in waveguides, ambient noise, transducers, and hydrophones.
PREREQUISITE: MTH 311.

AMP551 Special Topics
1-3 credits
Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to Applied Marine Physics.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

AMP553 Special Topics
1-3 credits
Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to Applied Marine Physics.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
AMP554 Special Topics
1-3 credits Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to Applied Marine Physics.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

AMP575 Applied Ocean Hydrodynamics
3 credits Fall Semester
The equations governing the dynamics of homogeneous fluids are derived. The concepts of deformation rates, vorticity, stream function, and ideal fluid flow are introduced and demonstrated in applications describing flows in the marine environment. Semi-empirical methods for analyzing viscous flows, boundary layers, and turbulence are presented. Eddy viscosity and more advanced turbulence closure schemes are discussed in the context of coastal circulation, bottom boundary layers and sediment transport.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

AMP576 Wave Propagation in the Ocean Environment
3 credits Fall Semester
Wave equation models, acoustic and other elastic waves, surface gravity waves, boundary conditions, ray tracing, dispersion, diffraction, reflection attenuation, and radiation transport laws are discussed.
PREREQUISITE: MTH 311.

AMP590 Sustainable Fisheries - Assessment and Conservation
3 credits Spring Semester
This is the second of a three course series. This course will focus on advanced stock assessment techniques using acoustics and optics. It will cover, for example:
- History of sampling fish stocks - "from catching to measuring fish" - Measuring with underwater sound and light - Sounds and echoes in marine ecosystem - Survey of fish stocks and their habitat.
PREREQUISITE: MSC 471, OR EQUIVALENT.

MARINE AFFAIRS & POLICY

MAF501 Political Ecology of Marine Management
3 credits Spring Semester
Course provides grounding in political ecology as an important theoretical approach to resource policy and management. The social analysis of resource use, social change, and development are discussed. Models of development and concepts of nature relate to resource use and policy formation is also included. Within this framework, ethnicity, class, and the politics of conservation are explored.
PREREQUISITE: MAF 505.

MAF502 Economics of Natural Resources
3 credits Fall Semester
Course brings together the approaches of natural resource and environmental economics to provide a comprehensive overview of the economics of national, international, and global environmental problems. A unifying theme throughout the course is the concept of sustainable development, defined as maximizing the net benefit to economic development while maintaining the services and quality of natural resources over time. Economic reasoning is used to examine the causes and consequences of environmental and resource problems and measures for dealing with them.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
MAF503 Marine Resource Economics

3 credits                                              Offered By Announcement Only
This course surveys the economics of international and global marine resource problems, with particular emphasis on biodiversity loss and climate change. The mainstream economics focus on efficiency--getting the most welfare out of a given endowment of resources--in complemented with a range of social science and natural science interdisciplinary linkages. Three themes stand out. First, economic efficiency may not be the only or even dominant concern in the provision of environmental assets. Issues of fairness and access to those assets, both within a time frame period and over time, may be of greater importance to both individuals and societies. Second, if habitats and their non-human occupants have some form of "intrinsic" value unrelated to human preferences, then we face the problem of how to account for those values. Third, economics lacks a "sustainability" theorem that would ensure whatever economy we might devise would be ecologically sustainable. To be sure of sustainability, economic models must have sustainability conditions built into them.
PREREQUISITE: MAF 502, ECO 345, OR PERMISSION OF INSTRUCTOR.

MAF504 Fieldwork in Coastal Management

3 credits                                                           Spring Semester
The field portion of this course will occur in Bocas del Toro, Panama, on the northwest Caribbean coast of Panama where the University of Miami has been involved in the development of a Coastal Management plan since 2004. The Bocas del Toro Archipelago of over 20 near-shore islands boasts a rich diversity of cultures, as well as high quality coastal environments. The region is currently experiencing rapid tourist growth, as well as residential development projects for foreigners. The cultural and biological diversities of the region, as well as the development pressures they face, provide an excellent opportunity to study the socio-economic and environmental impacts of tourist development; regional attempts to create land use and coastal plans; conflicts among different uses and users; and various cultural perspectives on the current and evolving situation. The course allows students to develop projects tailored to their interests and skills.
PREREQUISITE: MAF 518 IS HIGHLY RECOMMENDED.

MAF505 Fieldwork in Coastal Cultures

3 credits                                                           Spring Semester
Field course in which the student participates in a social and economic analysis of a coastal culture (i.e., stone crab fishermen in Everglades City, spiny lobster fishermen in Key West, boat builders and commercial divers in the Abacos, Bahamas). Preliminary lectures and reading introduce the theory and method which the student then practices during a week-long field trip.
PREREQUISITE: MSC 310 OR PERMISSION OF INSTRUCTOR.

MAF506 Advance Fieldwork in Coastal Cultures

3 credits                                                           Spring Semester
Advanced field course in which the students participate in the social and economic analysis of a coastal culture (e.g. Louisiana bayou fishermen, Abacos boat builders, Tarpon Spring spongers). Students utilize field research techniques learned in MAF 505 and develop skills in framing a research problem. Students examine a coastal issue from an anthropological perspective, structuring a field research paper.
PREREQUISITE: MAF 505.
MAF510 Environmental Planning and the Environmental Impact Statement
3 credits
Spring Semester
Course takes a broad view of environmental planning and analysis while focusing specifically on the preparation of environmental impact statements. Statutory requirements and procedures at the federal level are examined. Judicial opinions are studied that reflect environmental disputes and controversies. The course also considers some of the substantive requirements of environmental impact analyses such as the assessment of physical and biological environment and socioeconomic impacts.

MAF512 Aquaculture Management
3 credits
Fall Semester
Course examines the various strategies of resource exploitation and utilization in developing aquaculture projects. Resources include environmental, technological, social, economical, and administrative aspects encountered in commercial aquaculture development. The course covers all stages of planning and development, with emphasis on determining the technical and economic feasibility of aquaculture projects.

MAF513 Aquaculture Management II
3 credits
Spring Semester
Course is a complement to Aquaculture Management (MAF 512) and examines advanced aquaculture management techniques and strategies with emphasis on commercial operations. Course requires a background in either aquaculture or business. Prerequisite: MAF 512 or permission of instructor.
PREREQUISITE: MAF 512 OR PERMISSION OF INSTRUCTOR.

MAF514 Field Techniques in Prehistoric Underwater Archaeological Excavation
3 credits
First Summer Session
An introduction to specialized techniques of underwater excavation applicable to the excavation of Little Salt Spring (LSS), a prehistoric site owned and operated by Rosenstiel School of Marine and Atmospheric Science. All students participate in a one-week intensive lecture course in the prehistory of Florida and general techniques of underwater excavation. The field course begins after that. All students must be present for all of the field course in order to complete the basic requirements. Activities include daily underwater excavation in depths of 10-30 feet of water, as well as surface support activities relating to diving and the recording and basic conservation of recovered ecofacts and artifacts dating before 9,000 radiocarbon years before present.
PREREQUISITE: STUDENTS WHO INTEND TO DIVE (NOT REQUIRED) MUST HAVE ALREADY BEEN QUALIFIED AS RSMAS SCIENTIFIC DIVERS (BASIC), UNDER GUIDELINES ESTABLISHED BY THE AMERICAN ACADEMY OF UNDERWATER SCIENCES (AAUS) IN ORDER TO PARTICIPATE IN COURSE-RELATED SCUBA-DIVING ACTIVITIES.

MAF515 Techniques of Marine Archaeological Survey and Recording
3 credits
Offered By Announcement Only
The location and study of underwater archaeological sites is undergoing fundamental changes because of application of advanced technologies developed for other fields, notably remote sensing, and the general availability of computer power for individual users. This course introduces the student to the latest techniques of survey and recording, focusing on hardware and software that can greatly increase the efficiency of any underwater excavation.
PREREQUISITE: PREVIOUS COURSES IN ARCHAEOLOGY OR MARINE ARCHAEOLOGY OR PERMISSION OF INSTRUCTOR.
MAF516 Ocean Policy and Development and Analysis
3 credits
Fall Semester
Ocean policy development and analysis of issues such as: offshore oil drilling, fisheries resource conflicts, marine mammal protection, ocean dumping and incineration, multiple use conflicts in marine protected areas, pollution from land based sources, and oil spill contingency planning.

MAF517 Aquaculture and the Law
3 credits
Offered By Announcement Only
This course examines the substantive legal issues concerning Aquaculture and the Coastal Zone. Legal aspects of Aquaculture related to ownership and boundaries in the coastal zone, legal and regulatory constraints, international consideration private and public rights, risks and incentives. Fish and shellfish as personal property and conservation laws affecting the fish farmer.

MAF518 Coastal Zone Management
3 credits
Fall Semester
Development of a framework for formulation and assessment of coastal zone policy. Analysis of issues and conflicts in coastal zone management (CZM), such as: zoning and planning, coastal and beach protection, ecosystem protection, the federal flood insurance program, adaptations to sea level rise, coastal pollution from land-based sources, and tourism impacts.

MAF519 Aquaculture Management III (Fieldwork)
3 credits
First Summer Session
Students will conduct fieldwork on environmental, technological, social, economical, and administrative aspects encountered in commercial aquaculture operations. This field course will complement Aquaculture Management I and II. Students will be able to apply most of the topics taught in MAF 512 and MAF 513. They will participate in all stages of the production process, including maturation, spawning, larval husbandry, nursery and grow out techniques, as well as harvesting, processing and exporting. Students will visit several large commercial hatcheries, farms and processing plants currently producing processing, packing and exporting shrimp and fish (both marine and freshwater) for US and European and Asian markets. PREREQUISITE: MAF 512, 513 OR PERMISSION FROM THE INSTRUCTOR.

MAF520 Environmental Law
3 credits
Fall Semester
An introductory course focusing on environmental problems. The study of Regulatory legislation, common law, and administrative law. Topics include toxic substances, air and water pollution, and habitat and species protection. PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAF525 Fisheries Socioeconomics and Management
3 credits
Fall Semester
This course applies microeconomic theory to fisheries resource problems and policies. Economic models with the value of production as their objective, will contrast economists’ and biologists’ definitions of maximum yield and show why an unregulated fishery will not operate at either level. We will use economic reasoning to examine causes and consequences of fisheries problems and measures for dealing with them.
MAF526 Marine Cultural Resource Management

3 credits  
Spring Semester

Submerged archaeological sites as exhaustible resources of a country's cultural heritage. Policies and procedures for their protection or mitigation will be surveyed using as examples the statutes and regulations of foreign states, the federal government, and the US states.

PREREQUISITE: APY 340.

MAF530 Port Operations and Policy

3 credits  
Offered By Announcement Only

The course will include: Introduction to ports; port geography; port operations; port administration; Federal port policy; free ports/free zones; port investment/tariffs; port marketing; Coastal Zone Management and ports; case studies, CZM; fostering economic development; and Port planning and development.

PREREQUISITE: JUNIOR STANDING.

MAF560 Introduction to Marine Geographic Information Systems

3 credits  
Fall Semester

Marine Geographic Information Systems are emerging as a distinct subset of GIS, due to fundamental differences between terrestrial and underwater spatial information (2-D vs. 3-D, multiresolution, synoptic data collection, time depth (4-D) modeling). Approximately the first half of this course is a brief review of basic GIS, and the second half concentrates on aspects of marine data acquisition and manipulation in the GIS context.

MAF561 Introduction to Marine Geographic Information Systems - Laboratory

0 credit  
Fall Semester & First Summer Session

Introduction to Marine Geographic Information Systems - Laboratory introduces students the basic methods and technology in Marine Geographic Information Systems. The course is taught with hands-on laboratory exercises following the evolution of Marine Geographic Information Systems, from basic cartography to topological and network modeling to internet access and application.

MAF562 Spatial Analysis: Intermediate Course in Marine GIS

3 credits  
Spring Semester

Course provides a general survey of available quantitative methods for spatial analysis using Geographic Information Systems (GIS). Although GIS has been widely used for mapping and database management, this course is focused on the functionality of GIS as an effective tool for modeling and analyzing complex spatial relationships. Quantitative methods suitable for analyzing different features types are discussed. Applications for such methods are also presented.

PREREQUISITE: MAF 560, 561 OR PERMISSION OF THE INSTRUCTOR.

MAF570 Conservation and Management of Marine Mammals

3 credits  
Spring Semester

This course emphasizes on the notion that proper conservation and management of large marine vertebrates (i.e., marine mammals, sea turtles, sharks and rays) require the understanding and integration of some important aspects of the (comparative) biology and ecology of these groups of animals with the multifaceted nature (e.g., social, economical, ethical and cultural dimensions) of these concerns.

PREREQUISITE: JUNIOR STANDING
MAF576 Special Topics
1- 4 credits Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to marine affairs.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAF577 Special Topics
1- 4 credits Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to marine affairs. Prerequisite: Permission of instructor.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAF578 Special Topics
1- 4 credits Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to marine affairs.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAF579 Special Topics
1- 4 credits Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to marine affairs.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAF580 Special Topics
1- 4 credits Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to marine affairs.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MARINE & ATMOSPHERIC CHEMISTRY
MAC503 Principles of Marine and Atmospheric Chemistry
3 credits Fall Semester
Introduction to the chemical aspects of the sea and atmosphere chemical composition, physico-chemical properties and relationships, methodology of study, fundamental aspects of marine and atmospheric chemistry.
PREREQUISITE: CHM 111 OR PERMISSION OF INSTRUCTOR.

MAC510 Biogeochemical Exploration of the Major Ocean Basins
3 credits Fall Semester
This course will have students explore the basic hydrography and biochemistry of the major ocean basins through use of several publicly available global ocean data sets. Each ocean basin will be assessed for biogeochemical features that are unique to that system. By the end of the course, students will have the skills necessary to investigate and interpret marine biogeochemical processes throughout the global ocean.
PREREQUISITE: PERMISSION OF INSTRUCTOR

MAC560 Tropospheric Chemistry I
3 credits Spring Semester
Process-Oriented lower atmospheric chemistry. Topics include photochemical oxidant formation, nighttime chemistry, air-sea exchange, cloud droplet and aerosol reactions, physical properties of aerosols, and transport properties of the troposphere.
PREREQUISITE: MPO 552 OR AN UNDERGRADUATE METEOROLOGY COURSE, OR PERMISSION OF INSTRUCTOR.
MAC581 Special Topics in Marine and Atmospheric Chemistry
1-4 credits Offered By Announcement Only
Lectures, research projects or direct readings in special topics of marine and atmospheric chemistry.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAC584 Special Topics
1-4 credits Offered By Announcement Only
Lectures, research projects or directed readings in special topics of Marine and Atmospheric Chemistry.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MARINE BIOLOGY & FISHERIES
MBF504 Biology of Marine Mammals
3 credits Fall Semester
The purpose of this class is to introduce students to the biology, evolution, taxonomy, physiology, natural history, behavior, conservation, and management of marine mammals.
PREREQUISITE: ONE-YEAR OF GENERAL BIOLOGY

MBF505 Marine Mammal Disease and Medicine
3 credits Spring Semester
This course will cover the basics (theory and application) of marine mammal disease and medicine. Applications will focus on the medical management of managed care and wild populations.
PREREQUISITE: PREFERENCE WILL BE GIVEN TO MPS STUDENTS

MBF507 Marine Mammal Applied Behavior Analysis and Managed Care
3 credits Fall Semester
This course involves a thorough examination of specific aspects of marine mammal managed care and conservation programs, with an emphasis on behavior management, analysis, and modification as a basis for adaptive response to changing environments both in-situ and ex-situ. Coursework will also focus on health management and assessment, emergency handling and transportation, government regulations, and wildlife conservation.

MBF508 Biometrics in Marine Science
3 credits Fall Semester
Applied statistical analysis in marine biology and biological oceanography. Descriptive statistics, probability distributions, and hypothesis testing are discussed. Concepts of analysis of variance, simple linear regression, and computer statistical distribution-free methods are also included as well as principles and procedures with computer statistical packages for data analysis. Lecture and laboratory.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MBF511 Aquaculture
3 credits Offered By Announcement Only
Focus on techniques to culture marine organisms. The growth and physiology of early life stages, the culture of food organisms for larval stages, food requirements of larval and juvenile stages, water quality measurement, disease control, tank design, grow out, composition of artificial feeds and artificial spawning are discussed in detail. Applications of these techniques in commercial aquaculture, culture of animals for research, and for stock enhancement programs are examined. Practical examples are presented for laboratory and hands on rearing of fish larvae. Commercial aquaculture facilities are visited in field trips during the laboratory. Lecture, 2 hours; laboratory, 2 hours.
MBF512 Aquaculture Laboratory
2 credits Offered By Announcement Only
Determining and monitoring water quality, culturing food organisms, larval rearing of shrimp and fish, feeding techniques, identifying parasites and diseases, and avoiding causes of mortality are discussed. Visits to local fish and shrimp hatcheries and farms are included. Co requisite: MBF 511.
PREREQUISITE: COREQUISITE MBF 511.

MBF513 Biology and Ecology of Mangroves
3 credits Spring Semester
Recent research advances in the study of mangroves as a dynamic interface between terrestrial and marine systems. Topics include taxonomy, biogeography, morphology and physiognomy, water relations and mineral nutrition, and physiology and reproduction with emphasis on how mangroves modify tropical coastal environments and how they are affected by external stressors including global climate change. Lecture, 2 hours; field trips, 1 hour; field and laboratory work, minimum 2 hours.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MBF514 Tropical Marine Biology: A Field Course
3 credits Spring Semester
General survey of marine flora and fauna of tropical marine ecosystems. Inhabitants and communities of the sandy shore, rocky shore, and sea grass meadows, mangrove shoreline, coral and artificial reefs are collected, identified, maintained. Life histories of representatives are presented. Concepts of island biology and geology such as shore zonation local reef formation and the geological history of the lagoon are also discussed. The 10 day course involves 90 contact hours and approximately 40 hours of formal lectures. Grades are based on a laboratory practicum and written final exam. The course is given in its entirety at the University's field station at Bimini, Bahamas.
PREREQUISITE: BY PERMISSION OF INSTRUCTOR.

MBF515 Tropical Marine Ecology
3 credits Offered By Announcement Only
Marine ecology with emphasis on tropical ecosystems and local habitats. Physical environmental and biotic adaptations, population, and community ecology are discussed. Field exercises in mangrove, sea grass, and coral reef ecosystems are also included.
PREREQUISITE: INVERTEBRATE ZOOLOGY AND ECOLOGY OR PERMISSION OF INSTRUCTOR.

MBF518 Ecology and Physiology of Coral Reef Systems
3 credits Offered By Announcement Only
Coral reefs as integrated systems are examined from geological, ecological, and biological perspectives. The roles of global and local environmental fluctuations, physical disturbance, and biotic interactions in controlling reef formation and community structure is emphasized. The physiology of scleractinian corals and their algal symbionts is described and the prevalence of algal-invertebrate symbiosis on coral reefs related to nutrient cycling, productivity, and food webs on coral reefs.
PREREQUISITE: PERMISSION OF INSTRUCTORS.

MBF519 Tropical Marine Ecology Lab
1 credit Offered By Announcement Only
Combined field-laboratory exercises in mangrove, sea grass, and coral reef ecosystems.
MBF520 Tropical Marine Ecology: A Short Course
2 credits Spring Semester
This tropical Marine Biology course established primarily for Florida high school marine biology teachers is taught from an interactive point of view where students are afforded the opportunity to both learn in the conventional way of classroom lectures, and more importantly to learn by involvement and participation. Students are exposed to the major marine communities found in Bimini and South Florida such as: 1) coral reef; 2) artificial reef; 3) mangrove; 4) sea grass flats; and intertidal zones. Students learn about the uniqueness of each of these ecosystems and the plants and animals which inhabit them. Lectures are divided up by habitat and are given in the morning. In the afternoon students go into the field and traverse on foot or snorkel in each ecosystem. Specimens are collected and identified at night and students are required to learn and identify 50 organisms found in six ecosystems. Field guides are used as reference material. A written exam and laboratory practical is given on the last day of class.
PREREQUISITE: COLLEGE BIOLOGY.

MBF521 Field Techniques and Instrumentation in Tropical Marine Ecology
3 credits Spring Semester
This course covers the instrumentation and field techniques commonly used to characterize the structure and function of the three dominant ecosystems in the tropics and subtropics, i.e. coral reefs, sea grass beds and mangroves.
PREREQUISITE: MPS STATUS/PREFERENCE WILL BE GIVEN TO MPS STUDENTS

MBF525 Biology of Elasmobranch Fishes: A Field Course
2 credits Offered By Announcement Only
Course discusses the first aspects of elasmobranch biology including systematics of the major taxa, paleontology, and the evolutionary history of sharks as well as anatomical aspects. Course also addresses the physiology and biochemistry of sharks, circulatory, respiratory, developmental, skeletal, and sensory systems involving behavior, ecology, and life history strategies. Factors such as feeding, reproduction and social and swimming behavior are also discussed. The relation between man and shark: overexploitation as it affects shark conservation, survival, and biodiversity is included. Course is given in its entirety at Bimini, Bahamas.
PREREQUISITE: By permission of instructor.

MBF531 Plankton
3 credits Spring Semester
Course topics include the drifting organisms, their central role in the economy of the sea, the influence of the environment, and their adaptations to it. The dynamic and productivity of the plant and animal plankton, the ecology and physiology of animal plankton, especially in connection with special distribution and nutrition, and an introduction to the taxonomy, and quantitative enumeration of the animal plankton is included. Lecture, 3 hours.
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

MBF539 Oceanic Productivity
3 credits Spring Semester
History, methods, and current topics relevant to studies of marine primary production. Magnitude and fate of primary production in the sea is essential to understand secondary production, the success of fisheries recruitment, and global climate.
MBF540 Introduction to Ecological Modeling

3 credits

Offered By Announcement Only

An introduction to conceptual and mathematical model building methods for ecological processes at population, community, ecosystem, and landscape/seascape-level scales. Other topics include mathematical foundations, numerical modeling, holistic and structured population models, and demography, density-independent and -dependent models, linear and nonlinear systems, community composition, competition, succession, and ecosystem structure and function are discussed. Gap-phase, process-based, compartmental, and coupled biological-physical ecosystem models at landscape scales are also examined.

PREREQUISITE: CALCULUS AND PERMISSION OF INSTRUCTOR.

MBF542 Oceans and Human Health

3 credits

Fall Semester

The objective of this interdisciplinary course is to provide students with introductory knowledge of the broad and relatively young field of Oceans and Human Health. The focus is the present, future, and potential effects of oceanic processes and aquatic organisms on human health, and vice versa. These diverse factors reflect the physical, chemical, biotic and social processes which require an integration of information and knowledge from the medical, marine and social sciences. The course covers harmful algal blooms, marine microbes, and global climate change as well as an overview of coastal impacts and remedies (e.g. drugs from the sea and marine models) through a series of coordinated lectures and case studies on human health, physical environment, and oceanographic processes. Prerequisite: Permission of instructor.

PREREQUISITE: PERMISSION OF INSTRUCTOR

MBF545 Fisheries Sampling and Analysis

3 credits

Spring Semester

Students will learn about experimental sampling concepts and designs, instrumentation, survey implementation and statistical methods to assess fishery-independent size-structured population abundance of exploited and non-target species.

PREREQUISITE: MBF 508 OR PERMISSION FROM INSTRUCTOR-PREFERENCE WILL BE GIVEN TO MPS STUDENTS

MBF546 FISHERIES POPULATION BIOLOGY

3 credits

Spring Semester

Students will learn conceptual aspects and estimation methods for the main population processes such as growth, survival, reproduction and feeding. There will be an emphasis on data requirements and statistical validation of the data and model fitting, such that students will develop an ability to integrate and summarize complex biological knowledge under a set of well defined protocols.

PREREQUISITE: MBF 508 OR PERMISSION FROM INSTRUCTOR. PREFERENCE WILL BE GIVEN TO MPS STUDENTS

MBF547 Fisheries Ecosystems: Management and Conservation

3 credits

Spring Semester

Students will learn about the biological, social, economic and legal aspects of fisheries management. Case studies will be used to demonstrate why the success and failures of some fisheries management systems.
**MBF550 Analytical Techniques in Marine Biology**

2 credits  
Offered By Announcement Only  
Theory and applications of selected analytical techniques necessary to conduct quantitative research in marine biology (e.g., electrophoresis, metabolite assays, enzyme assays, radioisotope methodology). One hour lecture followed by three hour laboratory per week.

**MBF555 Graduate Physiology**

3 credits  
Spring Semester  
Broad overview of concepts important for physiology. Topics include discussions of genomes, molecular evolution and functional genetics (metabolism), cell biology and cell communication, and organism-environmental interactions. Readings from the primary literature are included with an emphasis on seminal papers. 
PREREQUISITE: NONE

**MBF565 Fisheries Ecology and Oceanography**

3 credits  
Fall Semester

**MBF570 Special Topics**

1-4 credits  
Offered By Announcement Only  
Lectures, research projects or directed readings in special topics related to Marine Biology and Fisheries. 
PREREQUISITE: PERMISSION OF INSTRUCTOR.

**MBF571 Special Topics**

1-4 credits  
Offered By Announcement Only  
Lectures, research projects or directed readings in special topics related to Marine Biology and Fisheries. 
PREREQUISITE: PERMISSION OF INSTRUCTOR.

**MBF572 Special Topics**

1-4 credits  
Offered By Announcement Only  
Lectures, research projects or directed readings in special topics related to Marine Biology and Fisheries. 
PREREQUISITE: PERMISSION OF INSTRUCTOR.

**MBF573 Special Topics**

1-4 credits  
Offered By Announcement Only  
Lectures, research projects or directed readings in special topics related to Marine Biology and Fisheries. 
PREREQUISITE: PERMISSION OF INSTRUCTOR.

**MBF574 Special Topics**

1-4 credits  
Offered By Announcement Only  
Lectures, research projects or directed readings in special topics related to Marine Biology and Fisheries. 
PREREQUISITE: PERMISSION OF INSTRUCTOR.

**MBF575 Current Applications of Ecological Theory**

3 credits  
Offered By Announcement Only  
Course examines current applications of ecological theory. Topics include issues of stress ecology, methodologies for evaluating stress responses, methodologies for ecological risk assessment, general systems theory, and human/environmental interactions. Lecture, 3 hours. 
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.
MBF576 Diseases of Marine Organisms
3 credits Offered By Announcement Only
Infectious, genetic, and environmentally induced diseases of marine fishes and invertebrates as well as diagnostic methods, cellular, and molecular pathology. Lecture, 3 hours.
PREREQUISITE: GRADUATE STANDING; OR BIL 150, 160, 255 AND PERMISSION OF THE INSTRUCTOR.

MBF578 Evolutionary Genetics
3 credits Fall Semester
A Graduate course that presents and overview from "New Evolutionary Synthesis" (1900) to Evolutionary Genomics. The critical points to emphasize is the importance of standing genetic variation, the role of neutral evolutionary process versus evolution by natural selection and how a evolution perspective provides meaning insights into the biology.

MBF586 Environmental Biology of Fishes
3 credits Offered By Announcement Only
Ecology, dispersal, and modes of life of fishes. Adaptations by larvae and adults to various habitats are covered as well as the effects of man on fish faunas and the importance of fishes to various ecological systems. Lecture, 3 hours.

MBF590 Acoustic Measurement of Nekton, Plankton and Underwater Habitat.
3 credits Fall Semester
MBF 590 is an introductory course on the theory, history and applications of acoustics to measure nekton, plankton and underwater habitat. It was designed for those students who wish to learn how to make quantitative measures of organisms and structure underwater. It is a prerequisite for MBF 690, Advance Measurement of Nekton, Plankton and Underwater Habitat, which focuses on data acquisition in the field and laboratory signal processing. This course is essential for students who need to make precise and accurate underwater measurements for their research.
PREREQUISITE: PERMISSION FROM THE INSTRUCTOR.

MARINE GEOLOGY & GEOPHYSICS
MGG501 Oceanography I (Geological)
2 credits Fall Semester
The first section of the core course curriculum designed as an integrated and multidisciplinary view of ocean processes, covering the major disciplines of marine science and their applications to the study of the marine environment. To be taken in sequence with Oceanography II - Physical (MPO 502), Oceanography III - Chemical (MAC 501), and Oceanography IV - Biological (MBF 502). This course is for non-MGG majors only.
PREREQUISITE: UNDERGRADUATES REQUIRE PERMISSION OF INSTRUCTOR.

MGG511 Earth Surface Systems
3 credits Fall Semester
An introduction to the elements of the earth surface environment and their interactions with an emphasis on the application to understanding the geologic record. Course includes discussions of the processes and agents that influence and shape the character of the earth's surface, the attributes of the resultant sedimentary features, and the use of these features to unravel geologic and geomorphic history. Focus is placed on systems dynamics and interactions among sedimentologic, geomorphic, biotic, and hydrologic processes.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
MGG512 Marine Micropaleontology
3 credits
Fall Semester
An introduction to the field of marine micropaleontology with an emphasis on applications in biostratigraphy, biochronology, paleoecology, and paleoceanography. Topics include morphology, taxonomy, ecology, and geologic record of the major microfossil groups, methods of environmental inference, and stable isotope and trace element geochemical studies. Lab work includes a survey of the most important taxonomic groups. Lecture, 3 hours; laboratory, 2 hours.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG513 Introductory Geochemistry
3 credits
Fall Semester
Fundamentals of atomic structure and quantum mechanics applied to Chemistry. Topics include origin and distribution of the elements, chemical bonding and substitution, basic thermodynamics of solids, liquids, and gases. Applications of these concepts to such geochemical processes as magmatic differentiation, rock-water interactions, low temperature aqueous geochemistry, and the geochemical cycling of the elements is also included.

MGG514 Geophysics
3 credits
Fall Semester
Course topics include seismology, gravity, heat flow, thermal history, geomagnetism, plate tectonics, and their importance in understanding the Earth's crust, mantle, and core.
PREREQUISITE: ONE YEAR OF CALCULUS AND ONE YEAR OF PHYSICS.

MGG515 Environmental Hydrology
3 credits
Fall Semester
Course offers an introduction to the physical processes of hydrological science. The mechanisms of evaporation, condensation, precipitation, infiltration, groundwater flow, overland flow, and stream flow are described. Areas of interrelation with environmental science, marine science, and geophysical science are emphasized. Description of appropriate measurement techniques and data interpretation methods are important parts of the course.
PREREQUISITE: PHYSICS.

MGG520 Igneous Petrology
3 credits
Fall Semester
Origin and differentiation of magmas in oceanic and continental settings. Igneous systems traced from the mantle and magma chambers to the eruptive stage. What we can tell from textures and mineralogy of igneous rocks. Use of trace-element and isotopes to understand igneous processes and magma source compositions. Magma types and plate-tectonic cycle. Magmatism when the Earth was young. Extra-terrestrial igneous rocks.

MGG525 Applied Environmental Geophysics
3 credits
Offered By Announcement Only
Application of subsurface geophysical tools to environmental problems. Course includes the theory and application of shallow refraction and reflection seismology, conducting field experiments and processing both marine and land seismic data, other marine survey techniques such as side-scan sonar surveying, potential field techniques (gravity, magnetics, EM), ground penetrating radar, and borehole geophysics.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
MGG533  Environmental Geology  
3 credits  
Offered By Announcement Only  

MGG541  Field Evaluation of Fossil Platforms, Margins, and Basins  
2 credits  
Offered By Announcement Only  
Field investigation of classic rock sequences formed within ancient platform, margin, and basin environments. The use of ancient exposures as a guide to the interpretation of modern marine environments.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG550  Mathematical Methods for Geoscientists  
3 credits  
Fall Semester  
Background mathematics needed to solve problems in the geosciences. Applications in tectonics, geodynamics, structural geology, seismology, and hydrology. Topics include linear inverse problems, least squares, linear algebra, matrix theory, vectors, dimensional analysis, probability and scientific inference, continuum mechanics, transform and numerical methods to solve differential, and partial differential equations. 
PREREQUISITE: ONE YEAR OF CALCULUS AND ONE YEAR OF PHYSICS.

MGG570  Continental Tectonics  
3 credits  
Spring Semester  
Reviews major research techniques used in the study of the structure and evolution of continental crust and topical discoveries, with an emphasis on the Neogene to Recent time. The course begins with brief introductions to the fields of structural geology, seismology, and geodesy as they relate to continental tectonics. New research in areas such as the rheology of the lithosphere, plate motion models, deformation of continental crust in plate boundary zones, oblique subduction, and earthquake hazard assessment are also discussed. 
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG579  Plate Tectonics  
3 credits  
Fall & Spring Semester  
The theory of plate tectonics, sea floor spreading, and continental drift. Mathematical description of plate motions, finite and instantaneous rotation poles, consequences of plate tectonics, mountain building, rifting, erosion, and recycling of continental materials are also discussed. 
PREREQUISITE: PERMISSION OF INSTRUCTOR.
MGG580 Geological and Environmental Remote Sensing

3 credits
Spring Semester
This one semester course will cover major remote sensing techniques used in the geological and environmental sciences. The course will begin with an introduction to the basic physics of remote sensing, followed by a review of major remote sensing techniques used in aircraft and satellite platforms, including IR and near IR, optical and microwave systems. We will then discuss specific terrestrial and coastal applications using a case history approach, including geologic, soil and biomass mapping, environmental monitoring, and natural hazard assessment. The course is aimed at graduate students and senior undergraduates with some background in math and physics. Grades are based on problems sets (a minimum of three), a mid-term test, and a report or lab exercise involving image processing, due at the end of the semester.
PREREQUISITE: CALCULUS AND PHYSICS.

MGG581 Image Analysis and Interpretation

3 credits
Offered By Announcement Only
Course provides a hands-on approach to learning how to use aerial photography, satellite imagery, and other remotely sensed data to derive information about the physical environment. This course enables the student to process, interpret, and analyze remotely sensed data for use in environmental research. Image Analysis and Interpretation complements the course, MGG 580.

MGG583 Scanning Electron Microscopy

2 credits
Spring Semester
Theory and practical application of the SEM and the electron probe to research problems. Lectures and laboratory with emphasis on independent operation of the SEM, special preparation techniques, and interpretation of results are included. Course is designed to provide students with a broad and thorough background in scanning electron microscopy.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG584 Special Topics

1-4 credits
Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to Marine Geology and Geophysics.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG585 Special Topics

1-4 credits
Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to Marine Geology and Geophysics.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG586 Special Topics

1-4 credits
Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to Marine Geology and Geophysics.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
MGG587 Special Topics
1-4 credits
Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to Marine Geology and Geophysics.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG588 Special Topics
1-4 credits
Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to Marine Geology and Geophysics.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MARINE & PHYSICAL OCEANOGRAPHY

MPO502 Oceanography II (Physical)
2 credits
Offered By Announcement Only
Fall Semester
The second section of the course core curriculum designed as an integrated and multidisciplinary view of ocean processes, covering the major disciplines of marine science and their applications to the study of the marine environment. To be taken in sequence with Oceanography I - Geological (MGG 501), Oceanography III - Chemical (MAC 501), and Oceanography IV - Biological (MBF 502). This course is for non-MPO majors only.
PREREQUISITE: UNDERGRADUATES REQUIRE PERMISSION OF INSTRUCTOR.

MPO503 Physical Oceanography
3 credits
Offered By Announcement Only
Fall Semester
Introduction to properties of seawater, instruments and methods, heat budget, general ocean circulation, formation of water masses, dynamics of circulation, regional oceanography, waves, tides, and sea level. A mathematical and problem solving course for majors in MPO.
PREREQUISITE: PHY 202 OR 206, MTH 310 OR 311, OR PERMISSION OF INSTRUCTOR.

MPO511 Geophysical Fluid Dynamics I
3 credits
Offered By Announcement Only
Fall Semester
The basic equations of state, continuity, and motion. Topics include wave motions, group velocity, theory of stratified fluids and internal waves turbulence.
PREREQUISITE: MPO 551, OR PERMISSION OF INSTRUCTOR.

MPO518 Remote Sensing of the Atmosphere
3 credits
Offered By Announcement Only
Methods and techniques for remote sensing of the earth’s atmosphere. Absorption and scattering of radiation by atmospheric constituents, molecular line or band absorption, and radiative transfer equation are discussed. Application to microwave radar, laser, and optical radar, ground and satellite and optical radar and radiometry, scattering of acoustic waves by turbulence, and to acoustic echo sounding methods are also included.
PREREQUISITE: EEN 533 AND/OR PERMISSION OF INSTRUCTOR.

MPO531 Physical Meteorology
3 credits
Offered By Announcement Only
Electromagnetic and acoustic wave propagation, absorption, and emission. Application to remote sensing, basic physics of dry aerosols, clouds and precipitation, fundamentals of atmospheric electricity, charge separation processes, and electrical field effects are also discussed. Other topics include air pollution physics, dispersal, and removal of particulate and gaseous materials from natural and anthropogenic sources.
PREREQUISITE: BASIC CALCULUS AND ORDINARY DIFFERENTIAL EQUATIONS.
MPO532 Broadcast Meteorology
3 credits
Spring Semester
Students will learn the proper techniques involved in preparing and presenting
a complete and professional weathercast with a heavy emphasis on communication
skills, computer graphics, and on-camera delivery.
PREREQUISITE: MPO 551 OR CONSENT OF INSTRUCTOR

MPO542 Physics of Remote Sensing I - Passive Systems
3 credits
Fall Semester
Course discusses basic physical principles of remote sensing. Topics include an
introduction, sampling issues, fundamental laws of electromagnetic waves, passive
sensing, active sensing, and a brief survey of satellite sensors.
PREREQUISITE: PERMISSION OF INSTRUCTOR

MPO551 Introduction to Atmospheric Science
3 credits
Fall Semester
Thermodynamics of dry and moist processes; elementary dynamical meteorology; description
of weather systems and phenomena on all scales; structure and mechanics
of the general circulation. Co requisite: MPO 552.
PREREQUISITE: PHY 206, MTH 310 OR 311, OR PERMISSION OF INSTRUCTOR.

MPO552 Synoptic Meteorological Laboratory
1 credit
Fall Semester
Analysis of the structure of atmospheric systems.
PREREQUISITE: PHY 206, MTH 310 OR 311, OR PERMISSION OF INSTRUCTOR.

MPO561 Tropical Atmosphere and Ocean
3 credits
Spring Semester
Observed structure of large-scale tropical circulations, including the Trades,
the intertropical Convergence Zone, the Walker circulation, and equatorial wave
disturbances. An overview of tropical climate, including El Nino/Southern Oscillation,
and tropical monsoons is included as well as the formation, structure, and dynamics
of tropical cyclone interactions between tropical convection and large-scale circulations,
equatorial waves, and flow instabilities.
PREREQUISITE: MPO 511, 551, OR PERMISSION OF INSTRUCTOR.

MPO562 Synoptic Scale Meteorology
3 credits
Offered By Announcement Only
Course topics include the structure and behavior of cyclones, anticyclones, and
other temperate latitude synoptic scale disturbances. Objective analysis of synoptic
observations, perturbation, stability analysis of large scale synoptic motions,
and barotropic and baroclinic waves are also analyzed.
PREREQUISITE: MSC 405 OR MPO 551 AND PERMISSION OF INSTRUCTOR.

MPO563 Mesoscale Meteorology and Severe Storms
3 credits
Offered By Announcement Only
Course topics include the structure and dynamics of clouds, thunderstorms, and
mesoscale convective systems, radar and satellite observations of clouds and precipitation,
severe storm forecasting, mesoscale disturbances, frontal and orographic clouds,
and precipitation.
PREREQUISITE: MSC 405 OR MPO 551 AND PERMISSION OF INSTRUCTOR
MARINE & ATMOSPHERIC SCIENCE

MARINE & PHYSICAL OCEANOGRAPHY

MPO581 Special Topics
1-4 credits Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to Meteorology and Physical Oceanography.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MPO582 Special Topics
1-4 credits Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to Meteorology and Physical Oceanography.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MPO583 Special Topics
1-4 credits Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to Meteorology and Physical Oceanography.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MPO584 Special Topics
1-4 credits Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to Meteorology and Physical Oceanography.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MPO585 Special Topics
1-4 credits Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to Meteorology and Physical Oceanography.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MARINE SCIENCE

MSC100 Ecology of Fishes
2 credits Second Summer Session
Ecology and population dynamics of the major zooplankton groups in open ocean and coastal habitats. Lecture, lab and field trip.

MSC101 Survey of Oceanography
3 credits Fall & Spring Semester & First Summer Session
Introduction to the oceans and their significance to mankind, encompassing geological, physical, chemical, and biological processes; man's role in and on the sea, including fisheries, pollution, and ocean management. Not for major or minor.

MSC102 Introduction to Weather and Climate
3 credits Spring Semester
The structure, physics, dynamics and thermodynamics of the atmosphere. Weather, weather forecasting, climate and climate change.

MSC103 Survey of Modern Meteorology
3 credits Fall Semester
Dynamics and thermodynamics of the atmosphere as they relate to contemporary issues in meteorology. Overview of numerical weather prediction techniques and new technologies for monitoring weather and climate. Open to majors or minors with permission of instructor.
PREREQUISITE: MTH 108.
MSC105 Introduction to Aquaculture
1 credit
Second Summer Session
The laboratory explores the basic tools and techniques of aquaculture; selection of species, water quality, life cycles and growth dynamics. Practical projects and data presentation required.

MSC106 Hurricanes and Society
3 credits
Fall & Spring Semester
An interdisciplinary course on the meteorology of hurricanes, a review of historically-significant storms, forecasting methods, and the societal and economic impact of the storms.
PREREQUISITE: MSC 102 OR MSC 103

MSC111 Introduction to Marine Science
0-3 credits
Fall Semester
Geological, physical, chemical and biological processes of the world's oceans.
The role of the oceans in global dynamics and man's role in and on the sea, including fisheries, pollution and ocean management. This course replaces MSC 115 and MSC 116. Enrollment limited to Marine Science/Marine Affairs majors. Lecture and discussion, 3 hours. Field trips.

MSC115 Marine Environments of South Florida
2 credits
Offered By Announcement Only
A field and lecture study of selected marine environments around South Florida, with emphasis on the interaction between organisms and the geological substrate. Field trips. Fee required.
PREREQUISITE: SUMMER SCHOLARS PROGRAM

MSC118 Current Weather Topics
1 credit
Spring Semester
Weather-and Climate-related phenomena such as hurricanes, severe storms, global warming, and acid rain. (Notes and analysis materials provided)

MSC120 Topics in Broadcast Meteorology
1 credit
Fall Semester
Broadcast Meteorology, including the production of weather briefings and weather news for TV, radio and print media.
PREREQUISITE: MSC 102 OR MSC 103 OR PERMISSION OF INSTRUCTOR

MSC172 Special Topics in Marine Science
2-6 credits
Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR

MSC201 Introduction to Research Diving Laboratory
2 credits
Fall Semester
Skills required for using SCUBA as a tool for research. Introduction to biological, geological, archaeological and physical oceanography methods for underwater data collection.
PREREQUISITE: RECREATIONAL SCUBA CERTIFICATION, ABILITY TO PASS A DIVING PHYSICAL EXAMINATION AND SWIMMING TEST. MSC 101 OR 111

MSC204 Environmental Statistics
3 credits
Fall & Spring Semester
This introductory course provides an overview of parametric and nonparametric statistics with an emphasis on applications in the analysis of environmental data.
PREREQUISITE: MTH 103 OR HIGHER, PLUS 6 CREDITS IN MSC.
MSC210 The Dynamic Oceans
3 credits
Fall Semester
PREREQUISITE: CO-REQUISITE MTH 161

MSC215 Chemical Oceanography
3 credits
Spring Semester
An introduction to the chemistry of the oceans. Descriptive chemical oceanography of the components of ocean waters (metals, gases, organic compounds and nutrients). Biogeochemical cycles in oceanic systems.
PREREQUISITE: CHM 111 AND 112. COREQ: MSC 216.

MSC216 Chemical Oceanography Laboratory
1 credit
Spring Semester
Chemical and physical methods in chemical oceanography. Analytical and instrumental techniques used to determine density, salinity, chlorinity, dissolved oxygen, nutrients and components of the carbonate system. Co requisite: MSC 215.
PREREQUISITE: COREQUISITE MSC 215.

MSC220 Climate and Global Change
3 credits
Fall Semester
The Earth's climate system and the role of natural and anthropogenic processes in shaping climate change.
PREREQUISITE: 3 CREDITS IN NATURAL SCIENCE

MSC230 Introduction to Marine Biology
3 credits
Fall Semester
PREREQUISITE: ONE YEAR OF BIOLOGY AND CHEMISTRY WITH LABORATORIES.

MSC232 Introduction to Marine Biology Laboratory
1 credit
Fall Semester
Ecology, physiology, and behavior of marine organisms in south Florida marine habitats. Laboratory Techniques.
PREREQUISITE: ONE YEAR OF BIOLOGY AND CHEMISTRY WITH LABORATORIES. COREQUISITE: MSC 230.

MSC243 Weather Forecasting
3 credits
Fall Semester
Application of physical principles to weather forecasting. Use and interpretation of computer-generated forecast guidance products of the U.S. Weather Service.
PREREQUISITE: MSC 103; MTH 108.

MSC300 Water Resources: History, Management, and Policy
3 credits
First & Second Summer Session
This course is intended to develop an overview of the issues and problems surrounding the management of aquatic resources in the broadest sense including water quality of natural waters, drinking water, water pollution, water quantity and supply issues, watershed management, wetland protection, and coastal management. We will explore the available strategies to wisely manage the various aquatic resources, policy options and their socio-economic aspects, legal frameworks, and institutional arrangements. The examples and cases discussed in the course will largely come from China, Vietnam, and the US.
MSC301 Introduction to Physical Oceanography  
3 credits  
Spring Semester  
Application of the laws of physics to the study of the properties and circulation of the world's oceans and atmosphere.

MSC303 Meteorological Instrumentation  
3 credits  
Spring Semester  
Techniques for measuring meteorological variables at the ground and in the free atmosphere. (Selected readings)  
PREREQUISITE: MSC 103; PHY 101 OR 205.

MSC305 Atmospheric Thermodynamics  
3 credits  
Fall Semester  
Equation of State; water vapor and moist air thermodynamics; phase changes and latent heat; buoyancy and atmospheric convection; thermodynamic diagrams.  
PREREQUISITE: MTH 310 AND PHY 206.

MSC306 Advanced Principles in Broadcast Meteorology  
3 credits  
Fall & Spring Semester  
Broadcast meteorology including the production of professional weather briefings and weather news for on camera delivery. Emphasis on accurately communicating complex meteorological concepts, use of computer graphics, and on-camera delivery.  
PREREQUISITE: MSC 103 OR PERMISSION OF INSTRUCTOR.

MSC307 Introduction to the physics of climate  
3 credits  
Spring Semester  
The physical mechanisms which govern the earth's climate and climate variability.  
PREREQUISITE: PRE: MSC 305

MSC310 Living Resources of the Ocean  
3 credits  
Spring Semester  
Marine fish and shellfish of major commercial and recreational value: biology, techniques of harvesting, and resource management.  
PREREQUISITE: MSC 230.

MSC313 Coastal Law  
3 credits  
Fall Semester  
Basic doctrines and public policy related to the use and regulation of the United States coastal zone and seabed.  
PREREQUISITE: JUNIOR STANDING.

MSC314 Ocean Law  
3 credits  
Spring Semester  
The principles of international ocean law regarding ocean management; ocean delimitation and issues of environmental ocean regulation within international legal framework.  
PREREQUISITE: JUNIOR STANDING.

MSC315 Marine Biota and Biogeochemical Cycles  
3 credits  
Spring Semester  
The distribution of dissolved and particulate materials in the sea is not uniform in time and space. This variability reflects the diverse sources, transformations, and sinks of chemical constituents in the sea. This course focuses on the role of marine organisms in marine biogeochemical cycling and the marine carbon cycle and its interaction with the terrestrial biosphere and atmosphere.  
PREREQUISITE: MSC 215 OR PERMISSION OF INSTRUCTOR
MSC316 Global Primary Production
3 credits Offered By Announcement Only
Photosynthesis supports the vast majority of life on planet earth. Although terrestrial and aquatic photoautotrophs share the same basic photosynthetic mechanism, it is clear that the physical environment and the fate of primary production differ drastically on land and in the sea. This course reviews the magnitude and the processes that shape primary production in terrestrial, oceanic, and freshwater habitats. It includes the fate of primary production in the earth's biomes, and the role of terrestrial and aquatic productivity in regulating, and responding to, variable climate.
PREREQUISITE: BIL 160

MSC321 Scientific Programming in the Atmospheric Sciences
3 credits Fall Semester
An introduction to scientific programming in a Linux environment using the FORTRAN 90/95 language with specific applications to Meteorology.
PREREQUISITE: (MSC 103 OR CSC 120), MTH 112, AND MTH 210.

MSC323 Invertebrate Zoology
4 credits Offered By Announcement Only
PREREQUISITE: ONE YEAR OF BIOLOGY WITH LABORATORY

MSC324 The Biology of Fishes
3 credits Offered By Announcement Only
PREREQUISITE: ONE YEAR OF GENERAL BIOLOGY WITH LABORATORY

MSC325 Biological Oceanographic Techniques
3 credits Spring Semester
Field sampling for plankton biomass and productivity; benthic biomass, and of selected physical parameters. Applications of molecular techniques and remote sensing to oceanographic problems.
PREREQUISITE: MSC 230.

MSC326 Marine Genomics
3 credits Spring Semester
Intensive lecture/laboratory course with emphasis on using genomic tools to address an independent research project of importance in the marine sciences.
PREREQUISITE: BIL 250

MSC340 Ocean Policy
3 credits Spring Semester
Analysis of ocean policy issues in US fisheries, marine conservation and marine protected areas, marine pollution, coastal management and regulation of offshore oil and gas activities.
PREREQUISITE: MSC 111 OR PERMISSION OF INSTRUCTOR

MSC345 Economics of Natural Resources and the Environment
3 credits Spring Semester
A comprehensive overview of the economics of national, international, and global environmental problems. A unifying theme throughout is sustainable development defined as "maximizing the net benefits of economic development while maintaining the services and quality of natural resources over time". We will use economic reasoning to examine causes and consequences of environmental and resource problems, and measures for dealing with them.
PREREQUISITE: ECO 211
MSC350 Survey of Marine Mammals
3 credits Fall Semester
The evolution and ecology of the cetaceans, pinnipeds, manatees, and allies: Natural history, zoogeography, physiology, husbandry, and biomedical aspects.
PREREQUISITE: BIL 150, MSC 230.

MSC364 Life in Moving Fluids
3 credits Fall Semester
The physical characteristics of air and water are described in relation to various flow phenomena that play a part in life functions. Adaptations of form and function reflect the very different properties of the media (air and water) of terrestrial and aquatic life. Energy conversion and transfer limit form and function and enable a wide variety of survival strategies.
PREREQUISITE: PHY 101, MSC 230, OR BIL 265

MSC371 Readings in Marine Science
1-2 credits Fall & Spring Semester & First & Second Summer Session
Library research with faculty supervision. Bibliography to be submitted in preparation for laboratory and/or field research project.

MSC372 Special Topics in Marine Science
2-6 credits Offered By Announcement Only

MSC400 Water Quality Assessment and Environmental Forensics
3 credits First & Second Summer Session
This course is intended to provide the scientific basis for understanding water quality issues and how water pollution can adversely affect the health of humans and ecosystems. Following basic introduction to the scientific concepts we will investigate numerous case studies using a forensic approach to unravel the mystery surrounding "how, why, and who" was responsible for specific water pollution cases that caused adverse human and/or ecological health effects. The course will have a capstone research project that will involve both laboratory and field investigations into a specific pollution problem.

MSC403 Introduction to Ocean Engineering
3 credits Fall Semester
PREREQUISITE: MTH 311

MSC405 Atmospheric Dynamics I
3 credits Spring Semester
Derivation and scaling of the equations of atmospheric motion; hydrostatic and geostrophic balance; circulation and vorticity.
PREREQUISITE: MSC 305. PREREQUISITE OR COREQUISITE: MTH 513.

MSC406 Atmospheric Dynamics II
3 credits Fall Semester
Baroclinic and barotropic instability; boundary layer dynamics; mathematical principles of numerical weather prediction; maintenance of the general circulation.
PREREQUISITE: MSC 405. MTH 311
MSC407 Weather Analysis
4 credits
Spring Semester
Three-dimensional analysis of synoptic-scale weather systems; application of the fundamental laws of atmospheric dynamics to observed weather patterns; practical questions of worldwide data exchange and display.
PREREQUISITE: MSC 305.

MSC409 Physical Meteorology
3 credits
Spring Semester
Atmospheric radiation; absorption and scattering principles of remote sensing of the atmosphere; cloud microphysics; nucleation, coalescence, ice crystal growth, atmospheric electricity and lightning.
PREREQUISITE: MSC 305.

MSC410 Marine Conservation Science
3 credits
Offered By Announcement Only
Nature of marine biodiversity, what threatens it, and what can be done to recover the biological integrity of estuaries, coastal seas, and oceans. Topics include: distinctive aspects of marine populations and ecosystems; threats to marine biological diversity, singly and in combination; place-based management of marine ecosystems; and the human dimensions of marine conservation.
PREREQUISITE: MSC 230.

MSC411 Projects in Marine Science
1-3 credits
Fall & Spring Semester & First & Second Summer Session
Individual, independent research projects with faculty supervision. A formal written report is required.
PREREQUISITE: MSC 371, AND PERMISSION OF THE COORDINATOR DURING THE SEMESTER PRECEEDING REGISTRATION.

MSC412 Advanced Meteorological Instrumentation
1 credit
Fall & Spring Semester & First & Second Summer Session
Includes lectures and labs involving field experience during a one-week cruise on the Royal Caribbean Explorer of the Seas.
PREREQUISITE: MSC 303, PHY 205.

MSC415 Coral Reef Science and Management
3 credits
Spring Semester
The interdisciplinary nature of coral reef science and management: biological, environmental, ecological and socioeconomic aspects of coral reef science, coral reef management problems and approaches at local to global scales, and the implications of climate change for coral reef science and management.
PREREQUISITE: MSC 230.

MSC420 Political Ecology of the Galapagos
3 credits
Spring Semester
This field course in the Galapagos National Park offers a rare chance to examine the human interactions in this highly politicized landscape of conservation. Students practice the political ecology approach for doing ethnographic fieldwork and explore how it can lead to wiser resource management.
PREREQUISITE: PERMISSION OF INSTRUCTOR
MSC421 Terrestrial Biology and Adaptations of the Galapagos.

3 credits  
This course will examine the terrestrial plant and animal life of Isabela Island; discuss the biology and how it adapted to life on Isabela. Through field and laboratory exercises we will explore the power of organisms' DNA in shaping life into unique forms like those famously present in today's Galapagos. 
PREREQUISITE: BIL 160 AND PERMISSION OF INSTRUCTOR.

MSC422 Marine Ecology of the Galapagos

3 credits  
This course focuses on marine ecosystems of the Galapagos, emphasizing near-shore environments. Topics will include how the unique location and oceanography of the Galapagos have shaped the species composition of resident and migrant marine animals. The role of genetic drift, local habitat characteristics and natural selection on marine ecosystems will be examined. This is a field intensive course with time spent in intertidal, near-shore and off-shore island environments. 
PREREQUISITE: BIL 160 OR MSC 230 AND PERMISSION OF INSTRUCTOR.

MSC423 Marine Conservation Biology & Fisheries of the Galapagos

3 credits  
The Galapagos are located in a uniquely productive area of the sea, which has allowed the development of a rich and unique marine biota. The first week of the course will carry the students through the dynamic, climatic, and oceanographic circumstances that determine the unique character of the Galapagos. The second week will cover scientific evaluation of the threats to the marine biodiversity of the Galapagos, focusing on sharks, penguins, sea turtles and other at-risk species and habitats.

MSC424 Origin and Geology of the Galapagos Islands.

3 credits  
This course will explore the origin and geology of volcanic oceanic islands, using the Galapagos Islands as a natural laboratory. Though all share a common origin in plate tectonic theory, each island presents a host of environments that originate in the processes of volcanic action, erosion and hydrology. Individual islands therefore develop distinctive ecosystems within which organisms interact and evolve. The emphasis of this course will be to lay out the underlying geological processes that have led to the formation of the islands and to their present state, and then to explore the ways the physical environment has influenced adaptation and biodiversity. 
PREREQUISITE: GSC 110 AND PERMISSION OF INSTRUCTOR.

MSC460 Spatial Applications in Marine Science

3 credits  
The concepts and marine applications of Geographic Information Systems. Every class period will entail short class lectures and hands on computer based GIS exercise on marine science related issues. Students will learn how to use ArcGIS 9.2 and create simple GIS models primarily using vector data. 
PREREQUISITE: JUNIOR OR SENIOR STANDING
MSC466 Environmental Physiology: Oxygen, Water and Ionoregulatory Stress  
3 credits  
Fall Semester  
This is an intensive laboratory course that combines and elaborates on concepts learned in BIL 265. Topics will include homeostasis, interactions with the external environment, and life with limited oxygen and water. Lectures will be highly discussion-based; students will be expected to read primary research articles as suggested by the professor before lecture to foster participation in those discussions and form hypotheses about accompanying laboratory. Each lab will be written up as a formal laboratory report (i.e., Introduction, Materials and Methods, Results and Discussion).  
PREREQUISITE: BIL 265 AND PERMISSION OF INSTRUCTOR.

MSC490 Special Studies in Marine Science  
1- 3 credits  
Offered By Announcement Only  
Interdisciplinary capstone course in Marine Science. Content of course will vary by semester. Content in any semester will be expressed in parentheses following "Special Studies" in the class schedule.  
PREREQUISITE: JUNIOR OR SENIOR STANDING AND PERMISSION OF INSTRUCTOR.

MSC491 Special Studies in Marine Science  
1- 3 credits  
Fall & Spring Semester  
Interdisciplinary capstone course in Marine Science. Content of course will vary by semester. Content in any semester will be expressed in parentheses following "Special Studies" in the class schedule.  
PREREQUISITE: JUNIOR OR SENIOR STANDING AND PERMISSION OF INSTRUCTOR.

RSMAS-GENERAL  
RSM500 Research Diving Techniques  
3 credits  
Offered By Announcement Only  
This course is designed to introduce students to the practices and policies of scientific diving. The objective is to prepare students to use SCUBA as a research tool for the marine sciences. The course content will qualify students as RESEARCH DIVERS under the UM/RSMAS Scientific Diving Program and will meet the standards set by the American Academy of Underwater Sciences (AAUS).

RSM510 Environmental Ethics  
3 credits  
Fall Semester  
This course will introduce students to a variety of key issues and concepts in environmental ethics. The course will be a joint scientific and philosophic collaboration, exploring the ethical dimensions of controversial and emerging issues in biotechnology and the environment. After students are exposed to the scientific background of various actual case studies focusing on current environmental and social impact, the ethical and philosophical issues raised by the discussions will be explored using the tools and methods of analytic philosophy. The course will develop the student's ability to construct and evaluate philosophical arguments in the field of environmental ethics, and to reason philosophically on numerous questions in contemporary applied ethics.  
PREREQUISITE: ALTHOUGH THERE ARE NO PHILOSOPHY PREREQUISITES FOR THIS COURSE, PERMISSION OF INSTRUCTOR IS REQUIRED.

RSM512 Statistics for Environmental Management  
3 credits  
Fall Semester  
This course covers the statistical theory, tools, and methods required for management analysis and improvement, emphasizing marine science applications.
RSM520 Climate and Society  
3 credits  
Spring Semester  
This course is designed to provide students from different disciplinary backgrounds with an overview of physical processes, general concepts and policy debates surrounding climate issues.

RSM545 Scientific Communication  
3 credits  
Spring Semester  
PREREQUISITE: MPS STATUS OR PERMISSION FROM INSTRUCTOR/PREFERENCE WILL BE GIVEN TO MPS STUDENTS

RSM560 Investigating Nature through Science Teacher Active Research (INSTAR)  
2 credits  
First & Second Summer Session  
This is a graduate level marine science course that provides a hands-on approach to education focused on geological and meteorological research in South Florida environment. The course provides training in marine science content, field techniques, state-of-the-art field, computer technology, and science educational reform measures. Participants work collaboratively with marine and atmospheric scientists to bring cutting edge marine science content and research to the classroom focusing on the following coastal themes: geology, hydrology and meteorology. The course will be applicable to all graduate and qualified undergraduate marine science students, per-service teachers in colleges of education, and in-service teachers in school systems throughout the country.

RSM561 INSTAR for Physical Sciences Follow-up  
1 credit  
First & Second Summer Session  
This is a follow-up course for participants in MGG 560 and is designed to test the application of the methods learned in MGG 560 to the teaching of high school students. Participants are expected to show evidence of teaching material learned in MGG 560.  
PREREQUISITE: RSM 560.

RSM562 Investigating Nature through Science Teacher Active Research in Biological Sci  
2 credits  
First & Second Summer Session  
This is a graduate level marine science course that provides a hands-on approach to education focused on marine science research and technology in South Florida coastal environments. The course provides training in marine science content, field techniques, state-of-the-art field and computer technology, and science educational reform measures. Participants work collaboratively with marine scientists to bring cutting edge marine science content and research to the classroom focusing on the following coastal themes: coral reefs and marine fisheries. The course will be applicable to all graduate and qualified undergraduate marine science students, per-service teachers in colleges of education, and in-service teachers in school systems throughout the country.

RSM563 INSTAR Biological Sciences Follow-up  
1 credit  
First & Second Summer Session  
This is a follow-up course for participants in RSM 562 and is designed to test the application of the methods learned in RSM 562 to the teaching of high school students. Participants are expected to show evidence of teaching material learned in RSM 562.  
PREREQUISITE: RSM 562.
RSM565 Fish Ecology and Oceanography
3 credits  Fall Semester
This course is intended to introduce students to key biological, ecological, oceanographic, and climatic processes of direct relevance to fishery species, with a view toward development of an ecosystem perspective.

RSM570 Carbon and Climate
3 credits  Offered By Announcement Only
This course is designed to provide students from different disciplinary backgrounds with an overview of the underlying processes, concepts, and policy debates surrounding the issue of carbon emissions and climate change. Individual faculty from RSMAS and elsewhere will lecture on cutting-edge research areas. Topics covered include: climate modeling; and climate policy.
PREREQUISITE: GRADUATE OR SENIOR STANDING AT RSMAS, OR PERMISSION OF INSTRUCTOR.

RSM571 Special Topics
1-4 credits  Offered By Announcement Only
Lectures and research projects in special topics related to Marine and Atmospheric Science.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

RSM572 Special Topics
1-4 credits  Fall & Spring Semester & First & Second Summer Session
Lectures and research projects in special topics related to Marine and Atmospheric Science.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
DAN101 Aerobic Dance  
1 credit 
Fall & Spring Semester  
The use of dance movement as a cardiovascular fitness activity.

DAN102 Stretching and Body Work  
1 credit 
Fall & Spring Semester & First & Second Summer Session  
Stretching techniques and examination of various body therapy concepts.

DAN103 Fitness Dance: Low Weight/High Rep  
1 credit 
Fall & Spring Semester & First Summer Session  
Use of wrist and ankle weights and high repetition through dance movements to increase muscular strength.

DAN104 Fitness Dance Level 2  
1 credit 
Fall & Spring Semester  
A Personal approach to fitness through the use of low impact aerobic dance movements to condition, tone, and shape the body.

DAN111 Modern Dance, Level One  
2 credits 
Fall & Spring Semester & First & Second Summer Session  
Introduction to the discipline of modern dance designed to develop understanding and skill in the basic vocabulary. Open to all students. (Repeatable up to four times).

DAN121 Ballet, Level One  
2 credits 
Fall & Spring Semester  
Introduction to the discipline of classical ballet designed to develop understanding and skill in the basic vocabulary. Open to all students. (Repeatable up to four times).

DAN130 Orientation to Dance  
2 credits 
Offered By Announcement Only  
Introduction to dance as an art form for those interested in career opportunities in dance education. Required for prospective dance minors. Open to all students.

DAN140 Theatre Dance Forms  
2 credits 
Fall Semester  
Introduction to movement skills and stylistic elements of theatrical forms of dance. (Repeatable).

DAN190 Improvisation  
2 credits 
Offered By Announcement Only  
Experience in selective and basic processes of movement involvement both individual and group. Course may be repeated.

DAN211 Modern Dance, Level Two  
3 credits 
Fall & Spring Semester & First & Second Summer Session  
Continuing exploration of modern dance techniques and theoretical concepts. Open to all students. Course may be repeated up to 4 times.

DAN221 Ballet, Level Two  
3 credits 
Fall & Spring Semester  
Study of ballet designed to extend technical skill and prepare student for advanced level work. Open to all students. Course may be repeated up to 4 times.
DAN235 Folk Dance  
2 credits  
Beginning study of folk and ethnic dance forms.  

DAN240 Cultural Dance Forms  
2 credits  
Introduction to movement skills and stylistic elements of dance forms from various cultures. Course may be repeated.  

DAN250 World History of the Dance  
3 credits  
Introductory exploration of dance history in relation to life, thought, and culture.  

DAN280 Dance Composition Level 1  
3 credits  
PREREQUISITE: DAN 211  

DAN285 Creative Dance for Children  
2 credits  
Introduction to theories and methods of teaching dance to children of elementary school age.  

DAN286 Teaching Dance to Children  
2 credits  
Theory and practice of teaching dance to preschool and school age children.  

DAN290 Introduction to Dance-Movement Therapy  
2 credits  
Introduction to dance-movement therapy theory and practice.  

DAN291 Dance Movement Therapy  
3 credits  
PREREQUISITE: INTRODUCTION TO DANCE MOVEMENT THERAPY (DAN 290)  

DAN311 Modern Dance, Level Three  
3 credits  
Study of modern dance techniques and theoretical concepts. Course may be repeated for credit.  

DAN321 Ballet Level Three  
3 credits  
Study of classical ballet at intermediate/advanced level. Open to all students. Course may be repeated for credit.  
PREREQUISITE: DAN 221 OR PERMISSION  

DAN335 Folk and Ethnic Dances: Forms and Teaching Methods  
2 credits  
Beginning study of folk and ethnic dance forms and teaching methods.  

DAN340 Specialized Ballet Forms  
2 credits  
Introduction to movement skills and stylistic elements of specialized ballet forms. Course may be repeated.  
PREREQUISITE: CONSENT OF INSTRUCTOR
DAN380 Dance Composition Level 2  
3 credits  
Spring Semester  
PREREQUISITE: DAN 280 OR DAN 311

DAN385 Methods of Teaching Dance (K-12)  
3 credits  
Fall & Spring Semester  
Content for teaching dance in a variety of settings including public school grades K-12.  
PREREQUISITE: PERMISSION.

DAN411 Modern Dance; Level Four  
3 credits  
Fall & Spring Semester  
Study of modern dance technique and theoretical concepts. Open to dance minors and by permission.  
PREREQUISITE: DAN 311 OR PERMISSION.

DAN421 Ballet, Level Four  
3 credits  
Fall & Spring Semester  
Study of classical ballet at an advanced level. Course may be repeated for credit.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

DAN450 History of Modern Dance  
3 credits  
Offered By Announcement Only  
Study of development, philosophies, and theories of American and European modern dance.  
PREREQUISITE: DAN 250.

DAN550 Women in Theatrical Dance  
3 credits  
Offered By Announcement Only  
Women in Dance; the most prominent dancers and choreographers from the 19th and 20th centuries who helped shape western theatrical dance art.  
PREREQUISITE: DAN 250 OR 450 OR GRADUATE STUDENT.

DAN585 Methods of Teaching Dance K-12 (Advanced)  
3 credits  
Offered By Announcement Only  
An advanced study of the Dance curriculum content in a variety of settings including public schools, grades K-12.  
PREREQUISITE: DAN 411 OR 450 AND PERMISSION.

DAN593 Special Topics Dance  
1- 3 credits  
Fall & Spring Semester & First & Second Summer Session  
Supervised topics and other activities in specific areas of Dance  
PREREQUISITE: NONE

INSTRUMENTAL PERFORMANCE  
MIPBAA Bassoon  
1- 2 credits  
Fall & Spring Semester  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Method Books by Giampieri, Jancourt, Milde (Vol. 1). Repertoire: Vivaldi Concerto, Bourdeau - Premier solo, Galliard, Handel, Marcello, Nino Rota Procaccini.  
PREREQUISITE: AUDITION FOR LEVEL A. SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.
MIPBAB Bassoon
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Method Books by Giampieri, Jancourt, Milde (Vol. 1). Repertoire: Vivaldi Concerto, Bourdeau - Premier solo, Galliard, Handel, Marcello, Nino Rota Proacci.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPBAC Bassoon
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Method Books by Giampieri, Jancourt, Milde (Vol. 1). Repertoire: Bourdeau - Second Solo, David, Domenico, Dubois, Fasch, Kozeluh, Pierne, Telemann, Vivaldi.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPBAD Bassoon
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Method Books by Giampieri, Jancourt, Milde (Vol. 1). Repertoire: Bourdeau - Second Solo, David, Domenico, Dubois, Fasch, Kozeluh, Pierne, Telemann, Vivaldi.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPBAE Bassoon
1- 2 credits  
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPBAF Bassoon
1- 2 credits  
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPBAG Bassoon
1- 2 credits  
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPBAH Bassoon
1- 2 credits  
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MIPBHA Baritone Horn
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of embouchure, breathing, and articulation. Appropriate major and minor scales. Repertoire: Arban, Concone, Schlossberg, Barat, Presser.
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MIPBHB Baritone Horn
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of embouchure, breathing, and articulation. Appropriate major and minor scales. Repertoire: Arban, Concone, Schlossberg, Barat, Presser.
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MIPBHC Baritone Horn
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of embouchure, breathing, and articulation. Appropriate major and minor scales. Repertoire: Bordogni-Rochut, Peters, Jones, Vivaldi.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPBHD Baritone Horn
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of embouchure, breathing, and articulation. Appropriate major and minor scales. Repertoire: Bordogni-Rochut, Peters, Jones, Vivaldi.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPBHE Baritone Horn
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of embouchure, breathing, and articulation. Appropriate major and minor scales. Repertoire: Fink Stevens, Maxime-Alphones, Jacob, Hartley.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPBHF Baritone Horn
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of embouchure, breathing, and articulation. Appropriate major and minor scales. Repertoire: Fink Stevens, Maxime-Alphones, Jacob, Hartley.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MIPBHG Baritone Horn
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of embouchure, breathing, and articulation. Appropriate major and minor scales. Repertoire: Charlier, Bozza, Uber, Horovitz Bellstedt; band and orchestral excerpts.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPBHH Baritone Horn
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of embouchure, breathing, and articulation. Appropriate major and minor scales. Repertoire: Charlier, Bozza, Uber, Horovitz Bellstedt; band and orchestral excerpts.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPCDA Conducting
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MIPCDB Conducting
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MIPCDC Conducting
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPCDD Conducting
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPCDE Conducting
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPCDF Conducting
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MIPCDG Conducting
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPCDH Conducting
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPCLA Clarinet
1- 2 credits  
Fall & Spring Semester
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MIPCLB Clarinet
1- 2 credits  
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPCLC Clarinet
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Same as previous semesters as well as Cavillini Caprices, and Opperman Intermediate Velocity Studies. Repertoire: Weber, Hindemith, Burgmuller.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPCLD Clarinet
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Same as previous semesters as well as Cavillini Caprices, and Opperman Intermediate Velocity Studies. Repertoire: Weber, Hindemith, Burgmuller.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPCLE Clarinet
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Same as previous semesters as well as Jean 16 or 18 Etudes, and Opperman Advanced Velocity Studies. Repertoire: Poulenc, Stravinsky, Bernstein, Brahms.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
SCHOOL OF MUSIC

INSTRUMENTAL PERFORMANCE

MIPCLF Clarinet

1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Same as previous semesters as well as Jean 16 or 18 Etudes, and Opperman Advanced Velocity Studies. Repertoire: Poulenc, Stravinsky, Bernstein, Brahms.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPCLG Clarinet

1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Same as previous semesters as well as Opperman Virtuoso Velocity Studies. Repertoire: Debussy, Rozsa, Muczynski, Berg.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPCLH Clarinet

1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Same as previous semesters as well as Opperman Virtuoso Velocity Studies. Repertoire: Debussy, Rozsa, Muczynski, Berg.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPDBA Double Bass

1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MIPDBB Double Bass

1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY

MIPDBC Double Bass

1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPDBD Double Bass

1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPDBE Double Bass

1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: UNDERGRADUATE LEVEL MIP DBD.

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SCHOOL OF MUSIC

INSTRUMENTAL PERFORMANCE

MIPDBF Double Bass
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPDBG Double Bass
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPDBH Double Bass
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPFHA French Horn
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of embouchure, breathing, and articulation. Appropriate major and minor scales. Beginning transposition study. Studies by Shoemaker, Kopprasch, Maxime-Alphonse, Kling; appropriate passages from orchestral works. Repertoire: Mozart, Saint-Saens, F. Strauss, R. Strauss. PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MIPFHB French Horn
1-2 credits
Fall & Spring Semester

MIPFHC French Horn
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Continue transposition study. Continue development of embouchure, breathing, and articulation. Appropriate major and minor scales. Studies by Kopprasch, Maxime-Alphonse, Kling; Gallay; orchestral repertoire. Repertoire: Mozart, Strauss, Rachmaninoff, Glazounov. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPFHD French Horn
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Continue transposition study. Continue development of embouchure, breathing, and articulation. Appropriate major and minor scales. Studies by Kopprasch, Maxime-Alphonse, Kling; Gallay; orchestral repertoire. Repertoire: Mozart, Strauss, Rachmaninoff, Glazounov. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
SCHOOL OF MUSIC

INSTRUMENTAL PERFORMANCE

MIPFHE French Horn
1- 2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Continued transposition study, further skills development, scales and arpeggios. Studies by Bach, Maxime-Alphonse, Gallay; Belloli; orchestral repertoire. Repertoire: Mozart, Strauss, Hindemith, Dukas, Chabier.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPFHF French Horn
1- 2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Continued transposition study, further skills development, scales and arpeggios. Studies by Bach, Maxime-Alphonse, Gallay; Belloli; orchestral repertoire. Repertoire: Mozart, Strauss, Hindemith, Dukas, Chabier.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPFHG French Horn
1- 2 credits
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPFHH French Horn
1- 2 credits
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPFLA Flute
1- 2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Taffanel - Gaubert 17 Daily Exercises, Berbiguer - 18 Etudes, Andersen Little Caprices. All major and minor scales, two octaves; Moyse - De la Sonorite, 24 Petite Melodies Vol. I. Repertoire: Handel Sonatas, Godard Allegretto.
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MIPFLB Flute
1- 2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Taffanel - Gaubert 17 Daily Exercises, Berbiguer - 18 Etudes, Andersen Little Caprices. All major and minor scales, two octaves; Moyse - De la Sonorite, 24 Petite Melodies Vol. I. Repertoire: Handel Sonatas, Godard Allegretto.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY
MIPFLC Flute
1- 2 credits  
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPFLD Flute
1- 2 credits  
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPFLE Flute
1- 2 credits  
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPFLF Flute
1- 2 credits  
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPFLG Flute
1- 2 credits  
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPFLH Flute
1- 2 credits  
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MIPGUA Guitar
1-2 credits  
Fall & Spring Semester  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.  
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MIPGUB Guitar
1-2 credits  
Fall & Spring Semester  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.  
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY

MIPGUC Guitar
1-2 credits  
Fall & Spring Semester  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.  
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPGUD Guitar
1-2 credits  
Fall & Spring Semester  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.  
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPGUE Guitar
1-2 credits  
Fall & Spring Semester  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.  
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPGUF Guitar
1-2 credits  
Fall & Spring Semester  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.  
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPGUG Guitar
1-2 credits  
Fall & Spring Semester  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.  
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPGUH Guitar
1-2 credits  
Fall & Spring Semester  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.  
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPHAA Harp
1-2 credits  
Fall & Spring Semester  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.  
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.
SCHOOL OF MUSIC
INSTRUMENTAL PERFORMANCE

MIPHAB Harp
1- 2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPHAC Harp
1- 2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPHAD Harp
1- 2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPHAE Harp
1- 2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPHAF Harp
1- 2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPHAG Harp
1- 2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPHAH Harp
1- 2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPOBA Oboe
1- 2 credits Fall & Spring Semester
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.
MIPOBB Oboe
1. 2 credits Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY

MIPOBC Oboe
1. 2 credits Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPOBD Oboe
1. 2 credits Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPOBE Oboe
1. 2 credits Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPOBF Oboe
1. 2 credits Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPOBG Oboe
1. 2 credits Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPOBH Oboe
1. 2 credits Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MIPPEA Percussion
1- 2 credits  
Fall & Spring Semester
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MIPPEB Percussion
1- 2 credits  
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY

MIPPEC Percussion
1- 2 credits  
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPPED Percussion
1- 2 credits  
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPPEE Percussion
1- 2 credits  
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MIPPEF Percussion
1-2 credits
Fall & Spring Semester

MIPPEG Percussion
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of advanced repertory and preparation for the final recital. Etudes and works on marimba, vibraphone, snare drum, timpani, multi-percussion, and orchestral excerpts. At least one piece at the final concert has to be a concerto-like composition performed with piano or percussion ensemble. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPPEH Percussion
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of advanced repertory and preparation for the final recital. Etudes and works on marimba, vibraphone, snare drum, timpani, multi-percussion, and orchestral excerpts. At least one piece at the final concert has to be a concerto-like composition performed with piano or percussion ensemble. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPSAA Saxophone
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MIPSAB Saxophone
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPSAC Saxophone
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPSAD Saxophone
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MIPSAE Saxophone
1-2 credits  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.  
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPSAF Saxophone
1-2 credits  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.  
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPSAG Saxophone
1-2 credits  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.  
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPSAH Saxophone
1-2 credits  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.  
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPTBA Trombone
1-2 credits  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of embouchure, breathing, articulation, sound, and slide technique. Appropriate major and minor scales. Works by Arban, Blazhevich, Pares, Rochut, Tyrell, and others. Solo literature as appropriate for the student's abilities.  
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MIPTBB Trombone
1-2 credits  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of embouchure, breathing, articulation, sound, and slide technique. Appropriate major and minor scales. Works by Arban, Blazhevich, Pares, Rochut, Tyrell, and others. Solo literature as appropriate for the student's abilities.  
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY

MIPTBC Trombone
1-2 credits  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Continuation of previous aspects of technical development. Works as previously listed, followed by Blume, and solo literature as appropriate for the student's abilities. Introduction of orchestral excerpts as both literature and as an aid to technical and musical development.  
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MIPTBD Trombone
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Continuation of previous aspects of technical development. Works as previously listed, followed by Blume, and solo literature as appropriate for the student's abilities. Introduction of orchestral excerpts as both literature and as an aid to technical and musical development.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPTBE Trombone
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Continuation of technical development including upper register, advanced slide technique, and refined articulation. Works as previously listed, followed by Masson and Bitsch. Solo literature as appropriate for the student's abilities, and continuation of selected orchestral excerpts.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPTBF Trombone
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Continuation of technical development including upper register, advanced slide technique, and refined articulation. Works as previously listed, followed by Masson and Bitsch. Solo literature as appropriate for the student's abilities, and continuation of selected orchestral excerpts.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPTBG Trombone
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Further development of all technical aspects of performance. Works by Masson and Bitsch, and solo literature geared towards recital performance.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPTBH Trombone
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Further development of all technical aspects of performance. Works by Masson and Bitsch, and solo literature geared towards recital performance.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPTPA Trumpet
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of embouchure, breathing, and articulation. Appropriate major and minor scales. Repertoire: Arban, Clarke, Hering, Schlossberg; orchestral excerpts.
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.
MIPTPB Trumpet
1- 2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of embouchure, breathing, and articulation. Appropriate major and minor scales. Repertoire: Arban, Clarke, Hering, Schlossberg; orchestral excerpts.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY

MIPTPC Trumpet
1- 2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPTPD Trumpet
1- 2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPTPE Trumpet
1- 2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPTPF Trumpet
1- 2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPTPG Trumpet
1- 2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPTPH Trumpet
1- 2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPTUA Tuba
1- 2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of embouchure, breathing, and articulation. Appropriate major and minor scales. Repertoire: Concone, Arban, Bordogni, Haddad, Hartley.
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.
SCHOOL OF MUSIC
INSTRUMENTAL PERFORMANCE

MIPTUB Tuba
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of embouchure, breathing, and articulation. Appropriate major and minor scales. Repertoire: Concone, Arban, Bordogni, Haddad, Hartley.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY

MIPTUC Tuba
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of embouchure, breathing, and articulation. Appropriate major and minor scales. Repertoire: Vasiliev, Kopprash, Gallay, Frankenpolh, Nelhybel, Bernstein.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPTUD Tuba
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of embouchure, breathing, and articulation. Appropriate major and minor scales. Repertoire: Vasiliev, Kopprash, Gallay, Frankenpolh, Nelhybel, Bernstein.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPTUE Tuba
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of embouchure, breathing, and articulation. Appropriate major and minor scales. Repertoire: Bach/Bobo Ostrander, Kotsier, Hindemith, Wilder.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPTUF Tuba
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of embouchure, breathing, and articulation. Appropriate major and minor scales. Repertoire: Bach/Bobo Ostrander, Kotsier, Hindemith, Wilder.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPTUG Tuba
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of embouchure, breathing, and articulation. Appropriate major and minor scales. Repertoire: Cimera, Maenz, Broughton, Persichetti, orchestral excerpts.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPTUH Tuba
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of embouchure, breathing, and articulation. Appropriate major and minor scales. Repertoire: Cimera, Maenz, Broughton, Persichetti, orchestral excerpts.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MIPVAA Viola
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Right hand and left hand position evaluation and adjustment if necessary. Scales and etudes as assigned. Repertoire: Solo literature appropriate for level and major.
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MIPVAB Viola
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Right hand and left hand position evaluation and adjustment if necessary. Scales and etudes as assigned. Repertoire: Solo literature appropriate for level and major.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPVAC Viola
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Scales and etudes as assigned. Repertoire: Solo literature appropriate for level and major.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPVAD Viola
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Scales and etudes as assigned. Repertoire: Solo literature appropriate for level and major.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPVAE Viola
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2-4 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Scales and etudes as assigned. Repertoire: Solo literature appropriate for level and major.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPVAF Viola
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Scales and etudes as assigned. Repertoire: Solo literature appropriate for level and major.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
SCHOOL OF MUSIC

INSTRUMENTAL PERFORMANCE

MIPVAG Viola
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Scales and etudes as assigned. Repertoire: Solo literature appropriate for level and major. Solo literature appropriate for level and major.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPVAH Viola
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Scales and etudes as assigned. Repertoire: Solo literature appropriate for level and major. Solo literature appropriate for level and major.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPVCA Violoncello
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of basic bow strokes, vibrato, and position changes. Appropriate major scales and arpeggios. Etudes as needed. Repertoire: Vivaldi Sonatas, Saint-Saens Concerto, Hayden C Major Concerto, Beethoven Sonata 1 or 2, Bach Suite 1 or 2.
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MIPVCB Violoncello
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Development of basic bow strokes, vibrato, and position changes. Appropriate major scales and arpeggios. Etudes as needed. Repertoire: Vivaldi Sonatas, Saint-Saens Concerto, Hayden C Major Concerto, Beethoven Sonata 1 or 2, Bach Suite 1 or 2.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY

MIPVCC Violoncello
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: All major and minor scales and arpeggios. Etudes as needed. Repertoire: Lalo Concerto, Boccherini B-flat, Beethoven or Brahms Sonatas, Bach Suite No. 3.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY

MIPVCD Violoncello
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: All major and minor scales and arpeggios. Etudes as needed. Repertoire: Lalo Concerto, Boccherini B-flat, Beethoven or Brahms Sonatas, Bach Suite No. 3.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MIPVCE Violoncello
1-2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Popper etudes, Duport etudes. Repertoire: Dvorak Concerto, Hayden D Major Concerto, Shostakovitch Sonata, Bach Suite No. 4.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPVCF Violoncello
1-2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Popper etudes, Duport etudes. Repertoire: Dvorak Concerto, Hayden D Major Concerto, Shostakovitch Sonata, Bach Suite No. 4.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPVCG Violoncello
1-2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Popper etudes, Piatti etudes. Repertoire: Schumann Concerto, Bach Suites No. 5 or No. 6.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPVCH Violoncello
1-2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Popper etudes, Piatti etudes. Repertoire: Schumann Concerto, Bach Suites No. 5 or No. 6.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPVNA Violin
1-2 credits Fall & Spring Semester
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MIPVNB Violin
1-2 credits Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
SCHOOL OF MUSIC

INSTRUMENTAL PERFORMANCE

MIPVNC Violin
1-2 credits
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPVND Violin
1-2 credits
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPVNE Violin
1-2 credits
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPVNF Violin
1-2 credits
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPVNG Violin
1-2 credits
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MIPVNH Violin
1-2 credits
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
SCHOOL OF MUSIC
INSTRUMENTAL PERFORMANCE

MIP001 Brass Forum
0 credit  Fall & Spring Semester
An informal recital setting and performance class for brass principals and majors with guest and faculty presentations.

MIP002 Guitar Forum
0 credit  Fall & Spring Semester
An informal recital setting and performance class for guitar principals and majors with guest and faculty presentations.

MIP005 Percussion Forum
0 credit  Fall & Spring Semester
An informal recital setting and performance class for percussion principals and majors with guest and faculty presentations.

MIP007 String Forum
0 credit  Fall & Spring Semester
An informal recital setting and performance class for string principals and majors with guest and faculty presentations.

MIP009 Woodwind Forum
0 credit  Fall & Spring Semester
An informal recital setting and performance class for woodwind principals and majors with guest and faculty presentations.

MIP120 Class Guitar I for Non-Music Majors
1 credit  Fall & Spring Semester

MIP121 Class Guitar I for Jazz Majors
1 credit  Fall & Spring Semester
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MIP130 Afro-Caribbean Hand Drumming, Level I
1 credit  Fall & Spring Semester
The study of hand drumming techniques used to perform the music of Africa and the new world African music that originated in the islands of the Caribbean and the countries of Central and Latin America. This class is taught in a workshop format.

MIP131 Afro-Caribbean Hand Drumming, Level II
1 credit  Fall & Spring Semester
The study of hand drumming techniques used to perform the music of Africa and the new world African music that originated in the islands of the Caribbean and the countries of Central and Latin America. Level II is a performance ensemble. PREREQUISITE: MIP 130 OR AUDITION.

MIP134 Steel Band/Trinidad
1 credit  Offered By Announcement Only
Steel Band/Trinidad reflects the broad musical heritage of the West Indies. Steel Drums (Pans) are combined with other indigenous instruments in the performance of both folk music and transcriptions of standard classical repertory in the tradition of the Trinidad carnival celebration. Level one of this class is taught as a workshop, level two is taught as a performance ensemble. PREREQUISITE: BY AUDITION.
MIP135 Percussion Contemporary Chamber Music
1 credit                               Fall & Spring Semester
Mandatory for all classical percussionists, this course focuses on the contemporary unaccompanied chamber music repertoire. The goal is for students to develop and use an advanced listening/communicating skill set, while playing music with others. This course also targets to improve students' capabilities in contemporary music interpretation and performance.
PREREQUISITE: PERCUSSION MAJORS; OR NON-PERCUSSION MAJORS BY PERMISSION OF THE PERCUSSION PROGRAM DIRECTOR.

MIP138 Trombone Choir
1 credit                               Fall & Spring Semester
The study and performance of literature for small and large trombone ensembles.

MIP139 Brass Chamber Music
1 credit                                Fall & Spring Semester
The study and performance of literature for small ensembles of similar or mixed brass instruments.

MIP140 Flute Choir
1 credit                                Fall & Spring Semester
Reading, rehearsing, and performing the flute choir repertoire (duets, trios, quartets, quintets).

MIP141 Saxophone Ensemble
1 credit                                Fall & Spring Semester
The study and performance of classical and jazz literature for small saxophone ensembles.

MIP143 Woodwind Chamber Music
1 credit                                Fall & Spring Semester
Exploring the woodwind chamber music repertoire as represented by various combinations of instruments.

MIP144 Woodwind Chamber Ensemble
1 credit                                Fall & Spring Semester
Woodwind chamber ensemble is designed to give students knowledge of the most important literature for woodwinds through practice, rehearsal, and performance of major works for woodwind chamber ensemble.

MIP145 String-Keyboard Chamber Music
1 credit                                Fall & Spring Semester
The study and performance of literature from the Baroque Period through the 20th Century for two or more players for string instrumentalists and strings with keyboard.

MIP170 Marching Band
1 credit                                Fall Semester
The "Band of the Hour" Marching Band is open to all qualified undergraduate and graduate students, regardless of major. The band performs at all home Miami Hurricane football games and selected away games.
MIP171 Symphonic Winds
1 credit
Fall & Spring Semester
Symphonic Band is a large wind band that performs significant repertoire for wind and percussion instruments. It is open to all qualified undergraduate and graduate students, regardless of major.

MIP172 University Band
1 credit
Spring Semester
University Band is a large ensemble offering students the opportunity to play standard repertoire of the wind band. This group is open to all wind and percussion players throughout the university, regardless of major.

MIP174 Brass Choir
1 credit
Fall & Spring Semester
Major works for Brass Choir are studied. Special emphasis is given to orchestral repertoire.

MIP176 Wind Ensemble
1 credit
Fall & Spring Semester
This course offers performance opportunities for qualified wind and percussion players. Repertoire includes significant literature written for the small and large wind band.

MIP180 Symphony Orchestra
1 credit
Fall & Spring Semester
The Symphony Orchestra performs significant repertoire for large orchestra. It is open to all qualified undergraduate students by audition.

MIP181 Instrumental Conducting I
1 credit
Fall Semester
This course provides practical procedures and materials for beginning instrumental conducting students. Students demonstrate basic conducting patterns, preparations, and releases in all meters.
PREREQUISITE: MTC 112 OR MTC 241 OR EQUIVALENT

MIP182 Instrumental Conducting II
1 credit
Spring Semester
This course provides practical procedures and materials for advancing instrumental conducting students. Students demonstrate refined skill in conducting musical styles and independence of gestures.
PREREQUISITE: MIP 181.

MIP191 Tuba Ensemble
1 credit
Fall & Spring Semester
The study and performance of compositions and/or transcriptions written for an ensemble of tubas and/or euphoniums.

MIP192 Classical Guitar Ensemble
1 credit
Fall & Spring Semester
This course focuses on sightreading, rhythm recognition, and ensemble performance through the study of exercises, scales, and diverse repertoire.
MIP199 Contemporary Music Ensemble
1 credit Offered By Announcement Only
An in-depth study and performance of new and standard classical music of the 20th century.

MIP220 Class Guitar II for Non-music Majors
1 credit Fall & Spring Semester

MIP221 Class Guitar II for Jazz Majors
1 credit Fall & Spring Semester

MIP281 Instrumental Conducting III
1 credit Fall Semester
This course provides a synthesis of the skills demonstrated in Instrumental Conducting I and II while developing error detection skills in common performance errors.
PREREQUISITE: MIP 182

MIP282 Instrumental Conducting IV
1 credit Spring Semester
Students demonstrate knowledge of instruments, instrumentation of the wind band and orchestra, and analyze scores for conception, interpretation, rehearsal, and performance.
PREREQUISITE: MIP 281.

MIP307 Skills Ensemble V: Classical Improvisation
1 credit Fall & Spring Semester
Introduce students to the process of improvisation in all styles of classical music.
PREREQUISITE: MTC 212 OR MTC 241

MIP308 Skills Ensemble VI: Composition as Applied Improvisation
1 credit Spring Semester
PREREQUISITE: MIP 307 SKILLS ENSEMBLE V: CLASSICAL IMPROVISATION

MIP317 Basic Conducting
1 credit Fall & Spring Semester
A study of the basic techniques of all rhythms, patterns, subdivisions of beats, dynamics, starting, stopping, and giving cues. Course provides an elementary study of scores as to form and harmonic intent.
PREREQUISITE: MTC 211 OR MTC 240

MIP399 Junior Recital
1 credit Fall & Spring Semester
A public recital of one half-hour or more. Course is required of all instrumental performance majors.

MIP407 Skills Ensemble VII: Basic Conducting/Arranging
1 credit Fall Semester
PREREQUISITE: MIP 308 SKILLS ENSEMBLES VI, MTC 416 ORCHESTRATION

MIP408 Skills Ensemble VIII: Culminating Project
1 credit Spring Semester
PREREQUISITE: MIP 407 SKILLS ENSEMBLE VII: BASIC CONDUCTING/ARRANGING
MIP418 Instrumental Conducting
1 credit
Spring Semester
Course covers Baton technique, score reading, and interpretation. Actual experience in rehearsing instrumental ensembles is included.
PREREQUISITE: MIP 317.

MIP493 Special Projects
1- 3 credits
Fall & Spring Semester
Supervised readings and other activities in specific areas of Instrumental Performance.
PREREQUISITE: UNDERGRADUATE MUSIC STUDENTS ONLY. DEAN'S APPROVAL AND SIGNATURE REQUIRED.

MIP499 Senior Recital
1 credit
Fall & Spring Semester
A public recital of one hour or more. Required of all performance majors.

MIP539 Brass Chamber Music Institute
2 credits
Offered By Announcement Only
Institute offers opportunities for brass players to perform in all forms of chamber music--from trios to Brass Choir. Included are master classes on each instrument plus the availability of private instruction from an excellent faculty. The material covered spans the musical periods including recent brass publications.

MIP541 Bassoon Repertoire and Pedagogy
1- 2 credits
Fall Semester
Solo and small ensemble literature of the bassoon since 1600.
PREREQUISITE: ADVANCED STANDING IN MUSIC AND PERMISSION OF INSTRUCTOR.

MIP542 Clarinet Repertoire and Pedagogy
1- 2 credits
Fall Semester
Solo and small ensemble literature of the clarinet since 1600.
PREREQUISITE: ADVANCED STANDING IN MUSIC AND PERMISSION OF INSTRUCTOR.

MIP543 Flute Repertoire and Pedagogy
1- 2 credits
Fall Semester
Solo and small ensemble literature of the flute since 1600.
PREREQUISITE: ADVANCED STANDING IN MUSIC AND PERMISSION OF INSTRUCTOR.

MIP544 Oboe Repertoire and Pedagogy
1- 2 credits
Fall Semester
Solo and small ensemble literature of the oboe since 1600.
PREREQUISITE: ADVANCED STANDING IN MUSIC AND PERMISSION OF INSTRUCTOR.

MIP545 Brass Repertoire and Pedagogy
1- 2 credits
Spring Semester
Solo and small ensemble literature of brass instruments since 1600.
PREREQUISITE: ADVANCED STANDING IN MUSIC AND PERMISSION OF INSTRUCTOR.

MIP546 Percussion Repertoire and Pedagogy
1- 2 credits
Spring Semester
Solo and small ensemble literature of percussion instruments since 1600.
PREREQUISITE: ADVANCED STANDING IN MUSIC AND PERMISSION OF INSTRUCTOR.
MIP547 Saxophone Repertoire and Pedagogy  
1-2 credits  
Fall Semester  
Solo and small ensemble literature of the saxophone since 1600.  
PREREQUISITE: ADVANCED STANDING IN MUSIC AND PERMISSION OF INSTRUCTOR.  

MIP548 Guitar Repertoire and Pedagogy  
1-2 credits  
Fall Semester  
Solo and small ensemble literature of the guitar since 1600.  
PREREQUISITE: ADVANCED STANDING IN MUSIC AND PERMISSION OF INSTRUCTOR.  

MIP549 String Repertoire and Pedagogy  
1-2 credits  
Fall Semester  
An exploration of teaching string playing. Areas covered include problem-solving and communication techniques, and practical considerations in establishing a teaching studio. Students participate in hands-on teaching opportunities. Prerequisite: Advanced standing in Music and permission of instructor.  
PREREQUISITE: ADVANCED STANDING IN MUSIC AND PERMISSION OF INSTRUCTOR.  

MIP550 Bach Cello Suites  
1 credit  
Spring Semester  
The study and performance of the six suites for unaccompanied cello of Johann Sebastian Bach.  

MIP580 Orchestral Audition Preparation  
1 credit  
Fall & Spring Semester  
The study of the more difficult excerpts from the orchestral literature for violin, viola, violoncello, or double bass. Course may be repeated for credit.  

MIP593 Special Topics MIP  
1-3 credits  
Fall & Spring Semester & First & Second Summer Session  
Supervised topics and other activities in specific areas of Instrumental Performance.  
PREREQUISITE: PERMISSION OF THE DEAN  

KEYBOARD PERFORMANCE  

MKPHCA Harpsichord  
1-2 credits  
Fall & Spring Semester  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.  
PREREQUISITE: INTEREST IN BASIC INSTRUCTION ON HOW TO APPROACH THE HARPSICHORD, IN USING HISTORICAL EVIDENCE FOR EARLY FINGERINGS, HAND POSITION AND ARTICULATION REPERTOIRE DRAWN FROM VARIOUS 16TH CENTURY ITALIAN, GERMAN AND FRENCH SOURCES. SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.  

MKPHCB Harpsichord  
1-2 credits  
Fall & Spring Semester  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.  
PREREQUISITE: SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B. BOX ALL FINGER STUDIES BASED ON BRITISH LIBRARY MSS. SOURCES FOR 16TH & 17TH CENTURY FINGERS. REPERTOIRE DRAWN FROM FERGUSON "STYLE & INTERPRETATION" 2 VOLS.  

MKPHCC Harpsichord  
1-2 credits  
Fall & Spring Semester  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.  
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MKPHCD Harpsichord
1- 2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY. REPETROIRE FROM THE REMAINDER OF PIECES NOT COVERED EARLIER VIA FERGUSON "STYLE & INTERPRETATION" EMBELLISHMENTS.

MKPHCE Harpsichord
1- 2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY. REPETROIRE DRAWN FROM BACH INVENTIONS & SINFONIAS, OTHER PIECES APPROPRIATE TO THE STUDENT'S ABILITIES-FROM FRENCH, ITALIAN, GERMAN & ENGLISH COMPOSERS, ADVANCED EMBELLISHMENTS.

MKPHCF Harpsichord
1- 2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY. SELECTIONS APPROPRIATE TO THE STUDENT'S ABILITIES FROM BACH'S ETC, COUPERIN'S ORDERS, PURCELL SUITES, ETC. POSSIBLE CONTEMPORARY REPERTOIRE.

MKPHCG Harpsichord
1- 2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY. SELECTIONS APPROPRIATE TO STUDENT'S LEVEL OF ADVANCEMENT; E.G., BACH FRENCH SUITES, SCARLATTI SONATAS & FURTHER CONTEMPORARY REPERTOIRE.

MKPHCH Harpsichord
1- 2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY. SUITABLE REPERTOIRE AT THIS LEVEL INCLUDES BACH PARTITAS, VARIATIONS, TOCCATAS, SOLER SONATAS & FANDANGO, CONCERTI BY BACH, HANDLE, THE BACH SONS & HAYDN.

MKPORA Organ
1- 2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Gleason, Method of Organ Playing: selected exercises from Manual Technique and Pedal Technique. Repertoire: Gleason, Method of Organ Playing: Compositions for Manuals, Studies and Compositions for Manuals and Pedal; selected chorale preludes and smaller-scale preludes and fugues by Bach, Buxtehude, Brahms, and others; basics of hymn playing.
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.
MKPORB Organ
1- 2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Gleason, Method of Organ Playing: selected exercises from Manual Technique and Pedal Technique. Repertoire: Gleason, Method of Organ Playing: Compositions for Manuals, Studies and Compositions for Manuals and Pedal; selected chorale preludes and smaller-scale preludes and fugues by Bach, Buxtehude, Brahms, and others; basics of hymn playing.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY

MKPORC Organ
1- 2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Gleason, Method of Organ Playing: selected exercises from Manual Technique, Pedal Exercises and Scales. Repertoire: Gleason, Method of Organ Playing: selected Compositions for Manuals and Pedals; intermediate-level works by Bach, Mendelssohn, Franck, and others; Additional hymn playing techniques.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MKPORD Organ
1- 2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Gleason, Method of Organ Playing: selected exercises from Manual Technique, Pedal Exercises and Scales. Repertoire: Gleason, Method of Organ Playing: selected Compositions for Manuals and Pedals; intermediate-level works by Bach, Mendelssohn, Franck, and others; Additional hymn playing techniques.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MKPORE Organ
1- 2 credits  Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MKPORF Organ
1- 2 credits  Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MKPORG Organ
1-2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Nilson, A System of Technical Studies in Pedal Playing for the Organ; selected exercises. Repertoire: Selected works by composers from all style periods, with an emphasis on the French Romantic and Modern French schools. Advanced service-playing techniques. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MKPORH Organ
1-2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Nilson, A System of Technical Studies in Pedal Playing for the Organ; selected exercises. Repertoire: Selected works by composers from all style periods, with an emphasis on the French Romantic and Modern French schools. Advanced service-playing techniques. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MKPPIA Piano
1-2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: To show a comprehensive foundation in basic/advanced keyboard skills. Repertoire: Appropriate repertoire as required. PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MKPPIB Piano
1-2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: To show a comprehensive foundation in basic/advanced keyboard skills. Repertoire: Appropriate repertoire as required. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY

MKPPIC Piano
1-2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: To show a comprehensive foundation in basic/advanced keyboard skills. Repertoire: Appropriate repertoire as required. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MKPPID Piano
1-2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: To show a comprehensive foundation in basic/advanced keyboard skills. Repertoire: Appropriate repertoire as required. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MKPPIE Piano
1-2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Complete Junior Recital as required. Repertoire: Appropriate repertoire as required. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MKPPIF Piano
1-2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Complete Junior Recital as required. Repertoire: Appropriate repertoire as required. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MKPPIG Piano
1-2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Complete Senior Recital as required. Repertoire: Appropriate repertoire as required. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MKPPIH Piano
1-2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Complete Senior Recital as required. Repertoire: Appropriate repertoire as required. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MKP006 Piano Forum
0 credit Fall & Spring Semester
A non-credit performance class for all piano majors and principals. Majors are required to perform once each semester with the approval of the applied teacher.

MKP111 Non-Major Class Piano I
1 credit Fall & Spring Semester
This course is designed for the adult beginner who has an interest in playing keyboard instruments for pleasure. Students with no previous musical or keyboard experience learn the fundamentals of music theory and apply them to playing the keyboard at the beginning level.

MKP112 Non-Major Class Piano II
1 credit Fall & Spring Semester
Designed for the adult beginner who has an interest in playing keyboard instruments for pleasure; this course builds on the concepts introduced in MKP 111. Students continue to learn the fundamentals of music theory and apply them to playing the keyboard. PREREQUISITE: MKP 111 OR AUDITION.

MKP140 Keyboard Studies I
1 credit Fall Semester
Major and minor five finger patterns, beginning repertoire, major scales and arpeggios, basic chord progressions, for types of triads, dominant seventh chords, beginning sight reading, harmonization, transposition, and improvisation skills. PREREQUISITE: PLACEMENT EXAM AND CURRENTLY ENROLLED IN MTC 140 OR HIGHER

MKP141 Keyboard Studies II
1 credit Spring Semester
Minor scales and arpeggios, modal scales, five types of seventh chords and inversions, and more extensive chord progressions. Study of repertoire and the development of sight-reading, harmonization, transposition, and improvisation skills are continued. PREREQUISITE: MKP 140 OR PLACEMENT AUDITION
MKP185 Musical Theatre Accompanying  
1 credit  
Fall & Spring Semester  
A class designed to improve the skills of pianists with a particular interest in musical theatre piano accompaniment. Students will study in a classroom setting.

MKP186 Vocal Accompanying I  
1 credit  
Fall & Spring Semester  
Pianists will attend seminars where the principles of accompanying classical and musical theatre singers are addressed. Students are assigned to accompany applied voice lessons and ensembles.

MKP187 Vocal Accompanying II  
1 credit  
Fall & Spring Semester  
Pianists attend seminars where the principles of accompanying classical and musical theatre singers are addressed. Students are assigned to accompany applied voice lessons and ensembles.

MKP189 Accompanying, Level I  
1 credit  
Fall & Spring Semester  
Development of sightreading skills and score preparation.

MKP190 Accompanying, Level II  
1 credit  
Fall & Spring Semester  
Progressive development of individual vocal/instrumental and ensemble accompanying, sightreading, score reading, and improvising from a lead sheet.  
PREREQUISITE: MKP 189 OR PERMISSION OF INSTRUCTOR.

MKP191 Accompanying, Level III  
1 credit  
Fall & Spring Semester  
Progressive development of all types of accompaniment skills including; clef and score reading, transposition,; possible recital, opera theater, choral ensemble, and/or orchestral accompanying.  
PREREQUISITE: MKP 190

MKP220 Computers, Keyboards, and Music  
2 credits  
Fall & Spring Semester  
An introduction to basic computing skills for the musician that explores computers, keyboards, and other MIDI- (Musical Instrument Digital Interface) related instruments as tools for the musician. Topics include electronic keyboards, computer hardware and software, MIDI sequencing, computer-assisted musical notation, and teaching strategies using new technologies. Students gain hands-on experience while completing projects in each of the above areas.  
PREREQUISITE: MKP 102

MKP240 Keyboard Studies III  
1 credit  
Fall Semester  
Dominant seventh arpeggios, secondary dominates, and work more extensively with chord progressions. Students also learn Theme and Variation form, Sonata form, and characteristics of the musical style periods. Study of repertoire and the development of sight-reading, harmonization, and the improvisation skills are continued. Transposition of instrumental music to concert pitch, and beginning choral and instrumental score reading are introduced. Students will continue playing major and minor scales at an increased level of difficulty.  
PREREQUISITE: MKP 141 OR PLACEMENT AUDITION
MKP241 Keyboard Studies IV
1 credit  
Spring Semester
Diminished seventh arpeggios, augmented, and Neapolitan sixth chords, Three-Part
Rondo forms, extended chord structures, and a variety of chord Progressions that
modulate. Study of repertoire and the development of sight-reading, harmonization,
transposition, and improvisation skills are continued. Choral and instrumental
score reading, modal scales, and major and minor scales are performed at an increased
level of difficulty.
PREREQUISITE: MKP 240 OR PLACEMENT AUDITION

MKP399 Junior Recital
1 credit  
Fall & Spring Semester
A public recital of one half-hour or more. Course is required of all performance
majors.

MKP493 Special Projects
1- 3 credits  
Fall & Spring Semester & First & Second Summer Session
Supervised readings and other activities in specific areas of Keyboard Performance.
PREREQUISITE: UNDERGRADUATE MUSIC STUDENTS ONLY. DEAN'S APPROVAL AND SIGNATURE
REQUIRED.

MKP499 Senior Recital
1 credit  
Fall & Spring Semester
A public recital of one hour or more. Course is required of all performance majors.

MKP547 Keyboard Pedagogy
3 credits  
Fall Semester
Methods and materials for teaching keyboard instruments with a focus on private
lesson instruction. Topics include teacher profile, general teaching considerations,
the business of teaching, the beginning student, second- and third-year students,
teaching materials, and an introduction to new technology in piano teaching.

MKP548 Intermediate to Advanced Repertoire
3 credits  
Spring Semester
PREREQUISITE: PIANO MAJORS AT OR ABOVE JUNIOR-STANDING OR PERMISSION OF INSTRUCTOR

MKP549 Keyboard Pedagogy II:Keyboard Pedagogy Diagnostics
3 credits  
Fall Semester
PREREQUISITE: PIANO MAJORS AT OR ABOVE JUNIOR-STANDING OR PERMISSION OF INSTRUCTOR

MKP550 Keyboard Pedagogy III: Practice Strategies
3 credits  
Fall & Spring Semester
PREREQUISITE: PIANO MAJORS AT OR ABOVE JUNIOR-STANDING OR PERMISSION OF INSTRUCTOR

MKP589 Keyboard Accompanying Program in Salzburg, Austria
2- 4 credits  
Spring Semester
Course is conducted at Salzburg College, Austria. Students receive comprehensive
and intensive coaching in piano and accompanying from Dr. Posnak and other internationally
acclaimed guest artists. Piano students study piano (2 cr.) and accompanying (1
cr.).
PREREQUISITE: BY AUDITION ONLY.
MKP593 Special Topics MKP
1-3 credits Fall & Spring Semester & First & Second Summer Session
Supervised topics and other activities in specific areas of Keyboard Performance.
PREREQUISITE: PERMISSION OF THE DEAN

MUSIC EDUCATION & THERAPY

MED010 Music Therapy Forum
0 credit Fall & Spring Semester
The course provides a weekly forum for sharing information about issues, current developments, and other matters related to music therapy as a field of study and as a profession.

MED015 Music Education Forum
0 credit Fall & Spring Semester
The course provides a weekly forum for sharing information about issues, current developments, and other matters related to music education as a field of study and as a profession. The course is required for all undergraduate MED majors during each semester, except during the semester of the internship.

MED149 Functional Techniques in Music Therapy I
1 credit Fall & Spring Semester
Students acquire functional guitar and piano skills while learning repertoire and techniques for leading and accompanying music therapy experiences.
PREREQUISITE: MKP 104 OR MKP 241, MED 245

MED159 Introduction to Music Therapy
2 credits Fall Semester
An overview of the field of music therapy, including history, theory and clinical practice. Includes field observations.
PREREQUISITE: NONE - OPEN TO ALL MAJORS

MED240 Woodwind Techniques
1 credit Fall & Spring Semester
Course provides group instruction in woodwind instruments with emphasis on basic skills of performance as well as the appropriate teaching techniques, methods, and materials necessary for public school pedagogy. Course may be repeated for credit.

MED241 Brass Techniques
1 credit Fall & Spring Semester
Group instruction in brass instruments with emphasis upon basic skills of performance as well as the appropriate teaching techniques, methods, and materials necessary for public school pedagogy. Course may be repeated for credit.

MED242 Percussion Techniques
1 credit Fall & Spring Semester
Group instruction in percussion (snare drum, mallet-keyboard percussion, timpani, drum set, and small accessory instruments) with emphasis upon basic skills of performance as well as the appropriate teaching techniques, methods, and materials necessary for public school pedagogy. Course may be repeated for credit.
MED243 String Techniques
1 credit  Fall & Spring Semester
The study of stringed instruments (violin, viola, cello, bass) in a heterogeneous
class with emphasis on general principles of string playing and teaching methods
for use in beginning and intermediate instruction in the schools. Course may
be repeated for credit.

MED244 Vocal Techniques
1 credit  Fall & Spring Semester
Class instruction in fundamentals of singing, breath control, tone production,
and solo singing for music majors.

MED245 Functional Music Techniques
1 credit  Fall & Spring Semester
Group instruction in the functional use of the guitar, autoharp, and recorder for
classroom or music therapy uses. Functional skills, teaching methods, and materials
are emphasized.

MED249 Functional Techniques in Music Therapy II
1 credit  Fall Semester
Students acquire functional piano skills while learning repertoire and techniques
for leading and accompanying music therapy experiences. Vocal skills are also emphasized.
PREREQUISITE: MKP 104 OR MKP 241, MED 149, MED 245

MED259 Music Therapy Pre-Practicum
2 credits  Spring Semester
Students will learn a treatment-planning model for clinical practice. Topics include:
assessment, goal setting, intervention design and data collection.
PREREQUISITE: MED 159

MED340 Marching Band Fundamentals
1 credit  Fall Semester
A study of all types of marching band activities and methods of presentation.

MED359 Music Therapy Practicum 1A
1 credit  Fall & Spring Semester
Structured clinical experience in music therapy under supervision of a music therapist
in varying health-related settings. Focus of the 1A practicum is to observe and
assist the on-site music therapist and to engage in limited co-leading.
PREREQUISITE: MED 259; MUSIC THERAPY PRE-PRACTICUM; MUSIC THERAPY MAJORS ONLY

MED360 Music Therapy Practicum 1B
1 credit  Fall & Spring Semester
Structured clinical experience in music therapy under supervision of a music therapist
in varying health-related settings. Focus of the 1B practicum is to observe and
assist the on-site music therapist and to co-lead for half of all sessions.
PREREQUISITE: MED 259 MTY PRE-PRACTICUM; MED 359 MTY PRACTICUM 1A; MUSIC THERAPY
MAJORS ONLY
MED361 Music Therapy Practicum 2A
1 credit  Fall & Spring Semester
Structured clinical experience in music therapy under supervision of a music therapist in varying health-related settings. Focus of the 2A practicum is to observe and assist the on-site music therapist and to co-lead for 60% of all sessions.
PREREQUISITE: MED 259 MTY; PRE-PRACTICUM: MED 359 MTY; PRACTICUM 1A: MED 360 MTY; PRACTICUM 1B; MUSIC THERAPY MAJORS ONLY

MED362 Music Therapy Practicum 2B
1 credit  Fall & Spring Semester
Structured clinical experience in music therapy under supervision of a music therapist in varying health-related settings. Focus of the 2B practicum is to observe and assist the on-site music therapist and to co-lead for 75% of all sessions.
PREREQUISITE: MED 259 MTY; PRE-PRACTICUM: MED 359 MTY; PRACTICUM 1A; MED 360 MTY; PRACTICUM 1B, MED 361 MTY PRACTICUM 2A; MUSIC THERAPY MAJORS ONLY

MED363 Music Therapy Practicum 3A
1 credit  Fall & Spring Semester
Structured clinical experience in music therapy under supervision of a music therapist in varying health-related settings. Focus of the 3A practicum is to observe and assist the on-site music therapist and to co-lead all sessions following one initial observation.
PREREQUISITE: MED 259; MED 359 MTY; PRACTICUM 1A; MED 360 MTY; PRACTICUM 1B, MED 361 MTY PRACTICUM 2A; MED 362 MTY PRACTICUM 2B; MUSIC THERAPY MAJORS ONLY

MED364 Music Therapy Practicum 3B
1 credit  Fall & Spring Semester
Structured clinical experience in music therapy under supervision of a music therapist in varying health-related settings. Focus of the 3B practicum is to independently design and lead all sessions.
PREREQUISITE: MED 259; MED 359; MED 360 MTY PRACTICUM 1B, MED 361 MTY PRACTICUM 2A; MED 362 MTY PRACTICUM 2B, MED 363 MTY PRACTICUM 3B; MTY MAJORS ONLY

MED430 Teaching Jazz/Popular Music in Secondary Schools
2 credits  Fall Semester
A survey of materials, methods, and techniques for instructing jazz and popular music in secondary schools. Review of standard literature, program organization, and in-class performance is emphasized. Designed specifically for music education majors.

MED433 Seminar for Teaching Associates.
1 credit  Fall & Spring Semester
Discussion of teaching, rehearsal techniques, and the organization and presentation of music materials related to the internship experiences. Course is required of all Music Education majors. To be taken in conjunction with Internship, MED 471.

MED450 Introduction to Research Methods in Music
3 credits  Fall Semester
This course is designed to help undergraduate students integrate research findings into their clinical and/or educational practice, implement research techniques into their work (e.g. through data collection or scholarly writing) and gain exposure to research if needed for future graduate students.
PREREQUISITE: MED 562.
SCHOOL OF MUSIC
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MED471 Associate Teaching in Elementary School Music
6 credits  Fall & Spring Semester
A comprehensive program in observation and supervised teaching in elementary school music. The student spends full time for one half a semester in an elementary school, participating in all activities of the music teacher under the guidance of school and university personnel.
PREREQUISITE: ADMISSION TO TEACHER CANDIDACY AND APPROVAL OF THE COMMITTEE ON FIELD EXPERIENCES.

MED473 Associate Teaching in Secondary School Music
6 credits  Fall & Spring Semester
A comprehensive program in observation and supervised teaching in secondary school music. The student spends full time for one half a semester in a secondary school, participating in all activities of the music teacher under the guidance of school and university personnel.
PREREQUISITE: ADMISSION TO TEACHER CANDIDACY AND APPROVAL OF THE COMMITTEE ON FIELD EXPERIENCES.

MED475 Student Teaching in Music
12 credits  Fall & Spring Semester
PREREQUISITE: ADMISSION TO TEACHER CANDIDACY AND APPROVAL OF THE COMMITTEE ON FIELD EXPERIENCES

MED493 Special Projects
1-3 credits  Fall & Spring Semester & First & Second Summer Session
Supervised readings and other activities in specific areas of Music Education.
PREREQUISITE: UNDERGRADUATE MUSIC STUDENTS ONLY. DEAN’S APPROVAL AND SIGNATURE REQUIRED.

MED541 Musical Instrument Maintenance
0 credit  Fall & Spring Semester
Mechanical development, care, and maintenance of musical instruments. Separate sections for wind, percussion, string, and keyboard instruments.

MED542 Teaching Elementary General Music (K-5)
3 credits  Fall Semester
Curriculum, methods, and materials designed for elementary music, K-6. Observation, planning, and teaching experience are emphasized.
PREREQUISITE: JUNIOR STANDING IN MED PROGRAM

MED543 Teaching Elementary and Secondary Instrumental Music
3 credits  Spring Semester
A study of elementary and secondary instrumental music instruction including program organization, teaching techniques, materials, and field experiences of music instruction in schools.
PREREQUISITE: JUNIOR STANDING IN MED PROGRAM

MED544 Teaching Secondary General Music (7-12)
3 credits  Spring Semester
Curriculum, methods, and materials designed for junior/senior high school general music programs.
PREREQUISITE: JUNIOR STANDING IN MED PROGRAM

1257
MED545 Music in Rehabilitation
3 credits Spring Semester
Review of development and functioning for neurologically-based sensorimotor behavior. Survey of disabilities and diseases that typically result in sensorimotor deficits and deficits is included. Demonstration and practice of therapeutic techniques for sensorimotor deficits are also covered.

MED546 Music Psychotherapy
3 credits Spring Semester
Survey and practical application of music as therapy in the treatment of psychiatric disorders and in promoting mental health.

MED548 Music for Special Learners
3 credits Spring Semester
This course is designed for music educators who will be working in schools with children and youth who have various disabilities. The purpose of MED 548 is to acquaint students with the characteristics of children and youth with disabilities, and introduce adaptive strategies in music education, K-12, for instructing children and youth with disabilities.

MED549 Teaching Secondary Choral Music
3 credits Fall Semester
Course covers curriculum, vocal/rehearsal techniques, and literature. Teaching music in secondary schools through the medium of choral performance.
PREREQUISITE: JUNIOR STANDING IN MED PROGRAM

MED555 Elementary Music Workshop
3 credits First Summer Session
Course is designed for in-service elementary school classroom teachers and music supervisors. Survey and experience with contemporary methodology and materials in elementary school music education is emphasized.

MED556 Secondary General Music Workshop
3 credits First Summer Session
Course is designed for teachers of general music classes in middle, junior high, and senior high schools. Practical experience with methods and materials designed for non-performance music classes, grades 7-12 is emphasized.

MED559 Internship in Music Therapy
3 credits First & Second Summer Session
Course provides students with a six month opportunity as a music therapy intern in an approved training facility.
PREREQUISITE: COMPLETION OF ALL OTHER COURSEWORK REQUIREMENTS FOR MUSIC THERAPY CERTIFICATION

MED560 Internship in Music Therapy II
0 credit First & Second Summer Session
PREREQUISITE: MED 559

MED562 Psychology of Music I
3 credits Spring Semester
Psychological foundations of music with an emphasis on problems of perception, experimental esthetics, functional music, and measurement and diagnosis of musical ability and achievement. Related literature of experimental investigation is reviewed.
MED575 Preschool Music Workshop
1-3 credits Offered By Announcement Only
Workshop is designed to prepare class members to initiate, administer, and teach music programs for preschool children. Materials which address the teacher, the child, and the parent are used. The daily schedule includes demonstration classes with children, lectures, and active participation of and discussion with class members. Emphasis is placed on working with a planning guide for teachers which offers articles on the major areas of the curriculum and clear, succinct statements focusing on the central issues of each lesson.

MED576 Music and Development
3 credits Fall Semester
Review of development in cognitive, communication, and musical domains. Survey of developmental disabilities most commonly found in child populations is included as well as demonstration and practice of therapeutic techniques for cognitive and communication deficits.

MED581 Teaching Classroom Guitar I
2 credits First Summer Session
This class is designed for students and teachers, guitarist or non-guitarist, who wishes to initiate, enhance, and teach guitar in a multi-level classroom setting. The course includes demonstration classes with elementary and secondary students. Topics include organization and teaching performance materials in a hands-on setting.

MED593 Special Topics MED
1-3 credits Fall & Spring Semester & First & Second Summer Session
Supervised topics and other activities in specific areas of Music Education.
PREREQUISITE: DEAN'S APPROVAL AND SIGNATURE REQUIRED

MUSIC MEDIA & INDUSTRY

MMICBA Contemporary Bass
1-2 credits Fall & Spring Semester
1 hour lesson for students enrolled for 2 credits; 1/2 hour lesson for students enrolled for 1 credit. Technical Requirements: Basic grooves and bass line construction. Analysis of different styles of rock, pop, rhythm & blues, and funk music. Introduction to acoustic, six-string electric and fretless electric basses. Knowledge of beginning functional harmony and sight-reading skills will also be addressed.
PREREQUISITE: AUDITION FOR LEVEL A

MMICBB Contemporary Bass
1-2 credits Fall & Spring Semester
One hour lesson for students enrolled for 2 credits, 1/2 hour lesson for students enrolled for 1 credit. Technical requirements: Basic grooves and bass line construction. Analysis of different styles of rock, pop, rhythm & blues, and funk music. Introduction to acoustic, six-string electric and fretless electric basses. Knowledge of beginning functional harmony and sight-reading skills will also be addressed.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MMICBC Contemporary Bass
1- 2 credits  
Fall & Spring Semester
One hour lesson for students enrolled for 2 credits, 1/2 hour less for students enrolled for 1 credit. Technical requirements: Analysis of important bass players and styles, including Carol Kaye, James Jamerson, Larry Graham, Jack Bruce and others. Studies in intermediate harmony and introduction to standard American popular repertoire. Sight-reading, chart reading, and basic rhythm section arranging.  
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICBD Contemporary Bass
1- 2 credits  
Fall & Spring Semester
One hour lesson for students enrolled for 2 credits, 1/2 hour less for students enrolled for 1 credit. Technical requirements: Analysis of important bass players and styles, including Carol Kaye, James Jamerson, Larry Graham, Jack Bruce and others. Studies in intermediate harmony and introduction to standard American popular repertoire. Sight-reading, chart reading, and basic rhythm section arranging.  
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS

MMICBE Contemporary Bass
1- 2 credits  
Fall & Spring Semester
One hour lesson for students enrolled for 2 credits, 1/2 hour less for students enrolled for 1 credit. Technical requirements: Analysis of classic rhythm sections recorded throughout the last 50 years, including concentration on important and influential drummers in different styles of rock, pop, R&B, funk, latin, and jazz idioms. Live performance skills and studio techniques. Studies in jazz and modal harmony. Introduction to improvisation.  
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICBF Contemporary Bass
1- 2 credits  
Fall & Spring Semester
One hour lesson for students enrolled for 2 credits, 1/2 hour less for students enrolled for 1 credit. Technical requirements: Analysis of classic rhythm sections recorded throughout the last 50 years, including concentration on important and influential drummers in different styles of rock, pop, R&B, funk, latin, and jazz idioms. Live performance skills and studio techniques. Studies in jazz and modal harmony. Introduction to improvisation.  
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICBG Contemporary Bass
1- 2 credits  
Fall & Spring Semester
One hour lesson for students enrolled for 2 credits, 1/2 hour less for students enrolled for 1 credit. Technical requirements: Advanced jazz harmony and improvisation. World music and odd meter studies, including non-traditional styles and grooves. Advanced concepts of recording and performance, including starting and working within the context of an original band project. Elements of professionalism in the music business.  
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY
MMICBH Contemporary Bass
1- 2 credits
One hour lesson for students enrolled for 2 credits, 1/2 hour less for students enrolled for 1 credit. Technical requirements: Advanced jazz harmony and improvisation. World music and odd meter studies, including non-traditional styles and grooves. Advanced concepts of recording and performance, including starting and working within the context of an original band project. Elements of professionalism in the music business.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICDA Contemporary Drumset
1- 2 credits
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Sticking techniques, basic hand/foot patterns. Analysis of rock, pop, rhythm and blues, Latin and jazz styles. Basic chart reading.
PREREQUISITE: AUDITION FOR LEVEL A

MMICDB Contemporary Drumset
1- 2 credits
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Sticking techniques, basic hand/foot patterns. Analysis of rock, pop, rhythm and blues, Latin and jazz styles. Basic chart reading.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICDC Contemporary Drumset
1- 2 credits
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Advanced sticking techniques, advanced hand/food patterns. Transcription/analysis of important drumset artists in major styles. Advanced chart reading.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICDD Contemporary Drumset
1- 2 credits
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Advanced sticking techniques, advanced hand/food patterns. Transcription/analysis of important drumset artists in major styles. Advanced chart reading.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICDE Contemporary Drumset
1- 2 credits
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Tools to enhance soloing and executing grooves. Transcription/analysis of important drumset artists in major styles. Basic studio performance techniques and relationship to singer/songwriter. Basic jazz performance elements. Basic world music rhythms.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY
MMICDF Contemporary Drumset
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Tools to enhance soloing and executing grooves. Transcription/analysis of important drumset artists in major styles. Basic studio performance techniques and relationship to singer/songwriter. Basic jazz performance elements. Basic world music rhythms.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICDG Contemporary Drumset
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Tools to enhance soloing and executing grooves. Transcription/analysis of important drumset artists in major styles. Basic studio performance techniques and relationship to singer/songwriter. Basic jazz performance elements. Basic world music rhythms.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICDH Contemporary Drumset
1- 2 credits  
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICGA Contemporary Guitar
1- 2 credits  
Fall & Spring Semester
PREREQUISITE: AUDITION FOR LEVEL A

MMICGB Contemporary Guitar
1- 2 credits  
Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICGC Contemporary Guitar
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Advanced harmony. Advanced accompanying. Transcription/analysis of important guitar artists in major styles. Advanced chart reading and capoing techniques. Beginning alternate tunings.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY
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MMICGD Contemporary Guitar
1-2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students
Transcription/analysis of important guitar artists in major styles. Advanced chart
reading and capoing techniques. Beginning alternate tunings. Successful completion
of Level D to move to Level E.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICGE Contemporary Guitar
1-2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students
enrolled for 1 credit. Technical Requirements: Advanced Rock/pop improvisation.
Beginning functional jazz harmony. Basic jazz performance elements. Transcription/analysis
of important guitar artists in major styles. Basic studio performance techniques
and relationship to singer/songwriter. Advanced acoustic guitar techniques. Guitar
equipment, maintenance.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICGF Contemporary Guitar
1-2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students
enrolled for 1 credit. Technical Requirements: Advanced Rock/pop improvisation.
Beginning functional jazz harmony. Basic jazz performance elements. Transcription/analysis
of important guitar artists in major styles. Basic studio performance techniques
and relationship to singer/songwriter. Advanced acoustic guitar techniques. Guitar
equipment, maintenance.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICGG Contemporary Guitar
1-2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students
enrolled for 1 credit. Technical Requirements: Advanced improvisational concepts.
Advanced jazz harmony. Advanced jazz performance elements. Advanced studio performance
techniques and relationship to the singer/songwriter. Advanced world music rhythms.
Development of individual voice in music. Advanced alternate tunings. Guitar equipment,
maintenance.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICGH Contemporary Guitar
1-2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students
enrolled for 1 credit. Technical Requirements: Advanced improvisational concepts.
Advanced jazz harmony. Advanced jazz performance elements. Advanced studio performance
techniques and relationship to the singer/songwriter. Advanced world music rhythms.
Development of individual voice in music. Advanced alternate tunings. Guitar equipment,
maintenance.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY
MMICKA Contemporary Keyboard
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Beginning Gospel harmony (triads in all inversions), basic add-nine pop harmony. Beginning accompanying. Analysis of rock, pop, rhythm and blues, Latin, and jazz styles. Basic chart reading.
PREREQUISITE: AUDITION FOR LEVEL A

MMICKB Contemporary Keyboard
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Beginning Gospel harmony (triads in all inversions), basic add-nine pop harmony. Beginning accompanying. Analysis of rock, pop, rhythm and blues, Latin, and jazz styles. Basic chart reading.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICKC Contemporary Keyboard
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Advanced Gospel harmony. Advanced accompanying. Transcription/analysis of important keyboard artists in major styles. Advanced chart reading.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICKD Contemporary Keyboard
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Advanced Gospel harmony. Advanced accompanying. Transcription/analysis of important keyboard artists in major styles. Advanced chart reading.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICKE Contemporary Keyboard
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Beginning pop improv. Beginning functional jazz harmony (thirds and sevenths). Basic jazz performance elements. Transcription/analysis of important keyboard artists in major styles. Basic studio performance techniques and relationship to singer/songwriter. Keyboard equipment, maintenance, patch libraries and sound editors.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICKF Contemporary Keyboard
1- 2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Beginning pop improv. Beginning functional jazz harmony (thirds and sevenths). Basic jazz performance elements. Transcription/analysis of important keyboard artists in major styles. Basic studio performance techniques and relationship to singer/songwriter. Keyboard equipment, maintenance, patch libraries and sound editors.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY
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MMICKG Contemporary Keyboard
1- 2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students
enrolled for 1 credit. Technical Requirements: Advanced improvisational concepts.
Advanced jazz harmony, advanced jazz performance elements. Advanced studio performance
techniques and relationship to singer/songwriter. Advanced world music rhythms.
Development of individual voice in music. Keyboard equipment, maintenance, patch
libraries and sound editors.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICKH Contemporary Keyboard
1- 2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students
enrolled for 1 credit. Technical Requirements: Advanced improvisational concepts.
Advanced jazz harmony, advanced jazz performance elements. Advanced studio performance
techniques and relationship to singer/songwriter. Advanced world music rhythms.
Development of individual voice in music. Keyboard equipment, maintenance, patch
libraries and sound editors.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICMA Contemporary Media
1- 2 credits  Fall & Spring Semester
PREREQUISITE: AUDITION FOR LEVEL A

MMICMB Contemporary Media
1- 2 credits  Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICMC Contemporary Media
1- 2 credits  Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICMD Contemporary Media
1- 2 credits  Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICME Contemporary Media
1- 2 credits  Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICMF Contemporary Media
1- 2 credits  Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICMG Contemporary Media
1- 2 credits  Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICMH Contemporary Media
1- 2 credits  Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OR PREVIOUS LEVELS OF STUDY
MMICVA Contemporary Voice
1-2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Warm-ups, Cool downs and introductory exercises for breath management. Attack in phonation, registration, resonance, articulation, coordination, microphone technique, key selection and vocal hygiene and maintenance. Beginning chart writing. Repertoire of original and contemporary songs in various styles as prescribed by the voice teacher.
PREREQUISITE: AUDITION FOR LEVEL A

MMICVB Contemporary Voice
1-2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Warm-ups, Cool downs and introductory exercises for breath management. Attack in phonation, registration, resonance, articulation, coordination, microphone technique, key selection and vocal hygiene and maintenance. Beginning chart writing. Repertoire of original and contemporary songs in various styles as prescribed by the voice teacher.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICVC Contemporary Voice
1-2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Basic knowledge of musical styles and historical periods of contemporary music, effective communication of songs in a variety of contemporary styles. Intermediate chart writing. Beginning improvisation and ornamentation. Repertoire of original and contemporary songs in various styles as prescribed by the voice teacher.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICVD Contemporary Voice
1-2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Basic knowledge of musical styles and historical periods of contemporary music, effective communication of songs in a variety of contemporary styles. Intermediate chart writing. Beginning improvisation and ornamentation. Repertoire of original and contemporary songs in various styles as prescribed by the voice teacher.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICVE Contemporary Voice
1-2 credits  
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Demonstrate evidence of upper range extension with fully supported sound and appropriate modification of resonators, ability to self-prepare a song, advance knowledge of music styles and historical periods of contemporary music, effective communication of original songs. Advanced chart writing. Intermediate improvisation and ornamentation. Repertoire of original and contemporary songs in various styles as prescribed by the voice teacher.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY
MMICVF Contemporary Voice
1-2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Demonstrate evidence of upper range extension with fully supported sound and appropriate modification of resonators, ability to self-prepare a song, advance knowledge of music styles and historical periods of contemporary music, effective communication of original songs. Advanced chart writing. Intermediate improvisation and ornamentation. Repertoire of original and contemporary songs in various styles as prescribed by the voice teacher. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICVG Contemporary Voice
1-2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Demonstrate perfect facility in required contemporary styles, ability to evaluate performances critically and coherently, facility with register changes in upper range, polished and artistic performance with accuracy in pitch, rhythm, good posture, breath management, phonation, resonance, and microphone technique. Advanced chart writing and studio vocal arranging techniques. Advanced improvisation and ornamentation. Repertoire of original and contemporary songs in various styles as prescribed by the voice teacher. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMICVH Contemporary Voice
1-2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits, 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Demonstrate perfect facility in required contemporary styles, ability to evaluate performances critically and coherently, facility with register changes in upper range, polished and artistic performance with accuracy in pitch, rhythm, good posture breath management, phonation, resonance, and microphone technique. Advanced chart writing and studio vocal arranging techniques. Advanced improvisation and ornamentation. Repertoire of original and contemporary songs in various styles as prescribed by the voice teacher. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVELS OF STUDY

MMI013 Music Engineering Forum
0 credit Fall & Spring Semester
A weekly forum for all Music Engineering Technology and Audio Engineering majors, both undergraduate and graduate. Presentations include faculty lectures, guest lectures by industry professionals, as well as dissemination of information pertaining to audio studios and laboratories.

MMI014 Music Industry Forum
0 credit Fall & Spring Semester
A weekly forum for all Music Industry majors, both graduate and undergraduate, for the purpose of updating current teaching material with the latest developments, presentations of guest speakers from the industry, lectures, and reports from faculty on current employment opportunities.

MMI015 Creative American Music Forum
0 credit Fall & Spring Semester
MMI102 Record Company Practicum  
1 credit  
Fall & Spring Semester  
The course focuses on practical techniques and procedures employed by record companies.  
PREREQUISITE: INSTRUCTOR APPROVAL

MMI103 Introduction to Film Sound Recording  
1 credit  
Offered By Announcement Only  
Introduction to the concepts and technologies involved with audio production for visual media.  
PREREQUISITE: NONE/SUMMER SCHOLAR PROGRAM ONLY.

MMI107 Contemporary Skills Ensemble I  
1 credit  
Fall Semester  
A Contemporary Performance musical skills ensemble focusing on ear training, transcription, notation, and interactive musicianship for songwriters.

MMI108 Contemporary Skills Ensemble II  
1 credit  
Spring Semester  
A Contemporary Performance musical skills ensemble focusing on ear training, transcription, notation, and interactive musicianship for songwriters.  
PREREQUISITE: MMI 107

MMI139 Small Contemporary Ensemble  
1 credit  
Fall & Spring Semester  
A performing ensemble of student-generated contemporary musical repertoire.  
PREREQUISITE: A PERFORMING ENSEMBLE OF STUDENT-GENERATED CONTEMPORARY MUSICAL REPERTOIRE.

MMI140 Audio Workshop I  
1 credit  
Offered By Announcement Only  
Introduction to recording studio techniques. Demonstrations and projects study microphone type and placement, console operation, digital multitrack recording, and stereo mixdown.  
PREREQUISITE: MMI 150. INSTRUCTOR’S PERMISSION REQUIRED.

MMI141 Audio Workshop II  
1 credit  
Offered By Announcement Only  
Hands-on study of advanced recording techniques. Topics include signal processing, automated mixdown, synchronization, and hard disk recording. Open to EAN Majors only.  
PREREQUISITE: MMI 140.

MMI150 Recording Studio Workshop  
1 credit  
Offered By Announcement Only  
Introduction to the recording studio. Projects cover microphone technique, signal flow, console architecture, multitrack recording, overdubs, and mixdown.  
PREREQUISITE: OPEN TO MUE AND MEC MAJORS ONLY.

MMI151 Desktop Audio Production  
1 credit  
Spring Semester  
Introduction to MIDI technology and computer based tools for music production.
MMI160 Ensemble Recording Workshop I
1 credit  Fall Semester
Assisting recording and sound reinforcement engineers in the assigned performance ensemble in both rehearsal and performance. Students also perform in a studio ensemble where they act as both recording engineer and musician.
PREREQUISITE: OPEN TO MUE AND MEC MAJORS ONLY.

MMI161 Ensemble Recording Workshop II
1 credit  Spring Semester
Students are responsible for the audio needs of an assigned ensemble in both rehearsal and performance. Lectures address audio equipment and practices. Students also perform in a studio ensemble where they act as the recording engineer and musician.
Open to MUE majors only.
PREREQUISITE: MMI 160

MMI162 Ensemble Recording Workshop III
1 credit  Offered By Announcement Only
Computer-based editing of digital audio and digital signal processing. Projects involve sampling, editing, and synchronization of digital media. In addition, students work in the recording studio, engineering digital multitrack recordings and mixdowns of advanced jazz and composition ensembles. Open to MUE and MEC Majors only.
PREREQUISITE: MMI 161. OPEN TO MUE AND MEC MAJORS ONLY.

MMI163 Ensemble Recording Workshop IV
1 credit  Offered By Announcement Only
Hardware and software aspects of MIDI studio technology. Projects involve computer-based sequencer control of synthesizers and signal processors. In addition, students work in the recording studio, engineering digital multitrack recordings and mixdowns of advanced jazz and composition ensembles. Open to MUE Majors only.
PREREQUISITE: MMI 162.

MMI170 Audio Design Workshop I
1 credit  Offered By Announcement Only
Fundamentals of audio system design and architecture including basic audio signal analysis and theory, electronics fundamentals, equipment specifications, and studio installation techniques. Students will design and troubleshoot audio projects including audio adapters, direct-injection devices, and passive audio circuits. Open to MUE Majors only.

MMI171 Audio Design Workshop II
1 credit  Fall Semester
Analog audio system design and architecture including dynamics processing, amplifier and filter theory, balanced and single-ended systems, circuits, and advanced equipment specifications. Students design and troubleshoot audio projects including microphone pre-amps, equalizers, noise-gates, and power amplifiers. Open to MUE and MEC Majors only.
PREREQUISITE: EEN 201. OPEN TO MUE AND MEC MAJORS ONLY.
**MMI172 Audio Design Workshop III**
1 credit  
Spring Semester  
Digital audio system design and architecture including analog-digital conversion, digital I/O hardware specifications, audio effects processors and digital audio recorder alignment techniques. Students design and troubleshoot audio projects including A/D converters, S/PDIF I/O, and DAT recorders. Open to MUE and EAN Majors only.  
PREREQUISITE: MMI 171.

**MMI173 Multinational Recorded Music Industry**
3 credits  
Fall Semester  
An introductory course presenting a structural overview of the music business and entertainment industries and the Music Industry Program. Historical development of music as a business and the development of the market place for both music and musicians. Emphasis is placed on contemporary music business practices. Topics include songwriting, publishing, musical instrument sales, artist management, arts management, professional organizations, copyright law, record industry, unions and guilds, and career development.

**MMI178 Entertainment Industry Survey**
3 credits  
Spring Semester  
An overview of the entertainment industry. Concentration on the legal, marketing and financial aspects of different areas of the industry including film, television, music, broadcasting, cable, publishing, video games, sports, performing arts, and theme parks.  
PREREQUISITE: OPEN ONLY TO MBEI AND MBEC MAJORS, AND MBEI MINORS

**MMI201 Introduction to Music Recording**
0-3 credits  
Fall Semester  
An overview study of the theory and practice of music recording, with emphasis on modern recording studio practices. Topics include physics of sound, psychoacoustics, studio design, microphones, loudspeakers, consoles, signal processing, digital audio, MIDI, and synchronization.  
PREREQUISITE: OPEN TO MUE AND MEC MAJORS ONLY.

**MMI207 African-American Song Workshop**
1 credit  
Fall Semester  
A learning ensemble focusing on the various African American song traditions from early plantations songs, shouts, hollers, and spirituals, to the development of blues traditions, to gospel. Students will develop a portfolio of original works in traditional African-American styles.  
PREREQUISITE: BY AUDITION ONLY. CO-REQUISITE: MCY 211

**MMI208 Anglo-American Song Workshop**
1 credit  
Spring Semester  
A learning ensemble focusing on the various Anglo-American song traditions from English and Irish folk ballads, to shape-note and Sacred Harp hymnody, to early folk, country and bluegrass. Students will develop a portfolio of original works in traditional Anglo-American styles.  
PREREQUISITE: BY AUDITION ONLY. CO-REQUISITE- MCY 212
MMI240 Music Technology Studies I  
1 credit  
Fall Semester  
Basic digital audio principles. Basic audio and midi projects from set up to final
mixdown. Recording of live instruments, MIDI sequencing, software synthesizers,
basic editing, and audio looping. Basic microphone techniques.

MMI241 Music Technology Studies II  
1 credit  
Spring Semester  
Configuring personal studios and DAWQ sessions, external controllers, managing
sessions and tracks, understanding timescales, virtual instruments and plug-ins,
editing MIDI and audio, understanding automation, use of sends, returns, and plug-ins.
PREREQUISITE: MMI 240

MMI273 Artist Development and the Live Entertainment Industry  
3 credits  
Spring Semester  
Views of the live entertainment industry from the perspective of the performing
artist, artist manager, talent agent, attorney, and concert promoter. Consideration
is given to the interpersonal, business, and contractual relationships and their
impact on the performing artist's career. Strategies for career development are
addressed and the ground rules of publicity, public relations, and promotion explored
and applied in practical situations through special individual and team projects.
PREREQUISITE: OPEN TO MBEI MAJORS, MBEI MINORS, AND MBEM MAJORS ONLY.

MMI274 Introduction to Music Copyright Law  
3 credits  
Spring Semester  
A study of essential provisions of the 1976 Copyright Act and the Protection of
Intellectual Property, covering the principles and practices of modern music publishing
and international co-publishing. Students examine the complexities of copyright
right law as it relates to the music industry.
PREREQUISITE: OPEN ONLY TO MBEI AND MBEC MAJORS, AND MBEI MINORS

MMI301 Audio for Film and Video  
3 credits  
Offered By Announcement Only  
Course provides fundamentals of audio control, recording, microphone use, transducer
theory, signal modification, audio aspects of videotape and film, location recording,
synchronization, and principles of digital audio.
PREREQUISITE: PERMISSION OF FILM DEPARTMENT.

MMI307 Modern American Pop Workshop I  
1 credit  
Fall Semester  
A learning ensemble focusing on American Popular Music from the late-1950s to the
late-1970s. Students will develop a portfolio of original songs in modern American
styles.
PREREQUISITE: BY AUDITION ONLY. CO-REQUISITE: MCY 311

MMI308 Modern American Pop Workshop II  
1 credit  
Spring Semester  
A learning ensemble focusing on American Popular Music from the 1980s to the present.
Students will develop a portfolio of original songs in modern American styles.
PREREQUISITE: BY AUDITION ONLY. CO-REQUISITE: MCY 312
MMI310 Music Business Essentials
3 credits  Fall & Spring Semester
An introductory course presenting a structural overview of the music industry and related entertainment business. Emphasis is placed on contemporary music business practices. Topics include music publishing and licensing, musical products, the live music industry, unions and guilds, the recording industry, marketing and promotion of recorded music, music in the media, and music in the digital age.
PREREQUISITE: OPEN ONLY TO MUSIC STUDENTS

MMI320 Contemporary Lyric Writing
3 credits  Fall Semester
This course explores modern lyric writing techniques, song lyric theory, and song form. Students will analyze a variety of lyrics by top modern songwriters, focusing on their use of literary devices, imagery and metaphors. Students will compose a number of original lyrics for the course.
PREREQUISITE: ENG 106, AND CAM MINORS ONLY

MMI361 Acoustics
3 credits  Fall Semester
A study of the theoretical principles of acoustics. Principle topics include basic properties, acoustical phenomena, superposition, Fourier Theorem, symmetry, vibrating strings and columns, and musical instruments; a study of architectural acoustics such as growth and decay, absorption coefficients, normal modes, diffusion, isolation, and mass law; design applications such as structural techniques and materials, live end-dead end, room geometry, tuning, TDS and other measurement techniques.
PREREQUISITE: MTH 112 OR MTH 162, AND PHY 102 OR PHY 205

MMI377 Royalties in the Music Publishing Industry
1 credit  Spring Semester
A practical study of royalty payment formulas and procedures used in the music publishing industry.
PREREQUISITE: MBEI MAJORS ONLY.

MMI378 Entertainment Industry Contract Basics
3 credits  Fall Semester
Business relations between the record company, artist, producer and licensees, both domestic and foreign. Analysis of actual contracts between parties, implications of newer technology on the industry.
PREREQUISITE: MMI 178 AND MMI 274; MBEI AND MBEC MAJORS, AND MBEI MINORS ONLY

MMI401 Audio Electronics
0-3 credits  Fall Semester
An introductory course in audio electronics theory and professional audio applications such as recording studio equipment and audio effects design. Coursework includes basic electronic components and theories, passive filtering, transformers, operational amplifiers, vacuum tubes, non-linear elements including diodes and JFETs, graphic, parametric and shelving equalizers, compressors, limiters, gates, microphone preamps, analog effects including reverb, flanging, and chorusing. Students will design custom audio circuits and use computer simulations to understand theory of operation.
PREREQUISITE: MMI 201. OPEN TO MUE AND MEC MAJORS ONLY.
MMI436 Audio Postproduction
3 credits  Spring Semester
Basic audio for video and film postproduction, including the study of time code, synchronization, electronic editing, video and film transports, dolby stereo, equipment interfacing, and future developments.

MMI445 Senior Project/Portfolio
1 credit  Spring Semester
This course is the capstone of the Creative American Music Program. Students will develop a portfolio of recordings of original songs. Students will also be required a public performance of their original songs.
PREREQUISITE: PERMISSION FROM INSTRUCTOR AND CAM MINORS ONLY

MMI454 Entertainment Industry Practicum
1 credit  Fall & Spring Semester
Practical experience in an entertainment industry organization.

MMI455 Internship in Entertainment Industry
2 credits  Fall & Spring Semester & First & Second Summer Session
Practical experience in different areas of the entertainment industry under the supervision of professional firms and the faculty advisor.
PREREQUISITE: MBEI AND MBEC MAJORS ONLY

MMI456 Internship in Entertainment Industries II
0 credit  Fall & Spring Semester & First & Second Summer Session
Continuation of MMI 455.
PREREQUISITE: MMI 455.

MMI460 Recital Recording and Sound Reinforcement
1 credit  Fall & Spring Semester
Practical experience in live concert recording, editing and mastering, and sound reinforcement, under supervision of professional on-campus engineers.
PREREQUISITE: OPEN ONLY TO MUE AND MEC MAJORS ONLY.

MMI465 Internship in Music Engineering
1-3 credits  Fall & Spring Semester & First & Second Summer Session
Practical experience in the music engineering industry such as work in a recording studio, broadcast company, hardware or software manufacturer, under professional supervision.
PREREQUISITE: OPEN ONLY TO MUE AND MEC MAJORS ONLY.

MMI493 Special Projects
1-3 credits  Fall & Spring Semester & First & Second Summer Session
Supervised readings and other activities in specific areas of Music Media and Industry.
PREREQUISITE: UNDERGRADUATE MUSIC STUDENTS ONLY. DEAN'S APPROVAL AND SIGNATURE REQUIRED.
MMI501 Transducer Theory  
3 credits  
Spring Semester  
Course covers the fundamentals of electromagnetism and audio transducer theory including loudspeaker and microphone systems. Classical electro-acoustical analysis of transducers including acoustic suspension, bass-reflex, transmission line, electrostatic and horn loudspeakers, dynamic, ribbon and condenser pressure, and pressure-gradient microphones. Students use computer-aided design programs and Thiele-Small parameterization to model loudspeakers and measure loudspeaker responses. Open to MUE and EAN Majors only.  
PREREQUISITE: EEN 201, PHY 102 OR PHY 205.

MMI502 Digital Audio I  
0-3 credits  
Fall Semester  
A study of the theory and practice of digital audio topics including discrete time sampling, quantization, dithering, PCM, A/D and D/A conversion, digital filtering, oversampling, modulation codes, time base, error correction codes, magnetic storage, DAT, and optical storage.  
PREREQUISITE: MMI 501.

MMI503 Digital Audio II  
3 credits  
Spring Semester  
A study of the theory and practice of digital audio topics including fiber optics and networks, compact disc, interconnection, psychoacoustics, low bit-rate perceptual coding, MPEG, digital audio broadcasting, sigma-delta conversion, noise shaping, digital video, and emerging technologies. Open to MUE and EAN Majors only.  
PREREQUISITE: MMI 502.

MMI504 Audio Analysis and Synthesis  
3 credits  
Offered By Announcement Only  
Theory, design, and development of computer audio synthesizers and analyzers. Students implement software synthesizers including analog and physical modeling, wave-table, wave-shaping, and FM designs. Classical and modern theories of timbre and time-frequency analysis are included.  
PREREQUISITE: MMI 503, OPEN TO MUE AND MEC MAJORS ONLY.

MMI505 Advanced Audio Signal Processing  
3 credits  
Spring Semester  
Theory, design and development of audio signal processing techniques. Topics include DSP architectures, systems design, algorithm development, and applications. DSP development tools used to write, debug, and test programs including time-domain based effects such as reverb, chorus, flanging, and digital delay as well as frequency-domain projects such as FIR, IIR, and FFT filters and vocoders.  
PREREQUISITE: MMI 504, OPEN TO MUE MAJORS ONLY.

MMI520 Audio Technology for Musicians  
0-3 credits  
Fall Semester  
Introduction and overview of audio technology with emphasis on music recording, production equipment, and techniques. Topics include microphones, loudspeakers, mixing consoles, interconnection, amplifiers, digital processing, time code, and surround sound. Open to non-MUE majors.  
PREREQUISITE: JUNIOR STANDING AND PERMISSION OF INSTRUCTOR.
MMI530 Entrepreneurship for Musicians
3 credits
Spring Semester
Course explores a wide range of options for musicians who want to pursue music business careers in their regional music markets. Students examine opportunities in performance, recording, composition, education, and more. Emphasis is placed on the packaging of musical skills in the marketplace and on the financial management of a small proprietary music business. As a result, the student musician will be prepared to make career decisions with foresight and planning.
PREREQUISITE: OPEN ONLY TO MUSIC STUDENTS

MMI537 Recorded Music Operations
3 credits
Spring Semester
A study of the activities involved in commercially exploiting recorded music. Includes an analysis of activities involved in the production, manufacturing, distribution, and marketing of a recorded music product; as well as related royalty accounting, mechanical licensing and master-use licensing activities.
PREREQUISITE: MMI 274 AND MMI 378; OPEN TO MBEI AND MBEC MAJORS, AND MBEI MINORS

MMI540 Music Supervision
3 credits
Fall & Spring Semester
A study of the principles and practices of combining music with visual images. The history, theory, tools, relationships and legalities of the field of Music Supervision will be explored.
PREREQUISITE: MMI 178; MBEI AND MBEC MAJORS, AND MBEI MINORS ONLY

MMI541 Tour Management and Production
3 credits
Fall & Spring Semester
Students will become familiar with the responsibilities of a tour planner. Individual tour planning projects are assigned which will give the students insight into the management and production of a tour.
PREREQUISITE: MMI 178; MBEI AND MBEC MAJORS, AND MBEI MINORS ONLY

MMI542 The Music Products Industry
3 credits
Fall & Spring Semester
The course is designed to give the students an overview of the music products industry. Special attention is given to the trade associations and their role regionally, nationally, and internationally. The importance of relationships as part of the business foundation is discussed at length. Students present promotion/marketing plans applicable to the products industry.
PREREQUISITE: MMI 178; MBEI AND MBEC MAJORS, AND MBEI MINORS ONLY

MMI543 Marketing and Promotion in the Entertainment Industry
3 credits
Fall & Spring Semester
PREREQUISITE: MMI 178; MBEI AND MBEC MAJORS, AND MBEI MINORS ONLY

MMI573 International Music Publishing
2 credits
Spring Semester
An in-depth study of the international publishing industry with an emphasis on catalog development and exploitation.
PREREQUISITE: MMI 178 AND MMI 274; MBEI AND MBEC MAJORS, AND MBEI MINORS ONLY
MMI578 Royalties in the Recorded Music Industry
1 credit Fall Semester
A practical study of royalty payment formulas and procedures used in the recorded music industry.
PREREQUISITE: MMI 178 AND MMI 274; MBEI AND MBEC MAJORS, AND MBEI MINORS ONLY

MMI593 Special Topics MMI
1-3 credits Fall & Spring Semester & First & Second Summer Session
Supervised topics and other activities in specific areas of Music Media and Industry.
PREREQUISITE: DEAN’S APPROVAL AND SIGNATURE REQUIRED

MUSIC THEORY & COMPOSITION

MTC012 Composition Forum
0 credit Fall & Spring Semester
A weekly forum for all Music Theory/Composition majors, both undergraduate and graduate. Course involves guest lectures by visiting composers and performers, presentations of faculty compositions, and group discussions of important compositional and theoretical issues.

MTC015 Media Writing and Production Forum
0 credit Fall & Spring Semester
This course provides a weekly forum for sharing information about issues, current developments, and other matters related to commercial music composition and production as a field of study and as a profession. The course is required for all undergraduate MWP majors during each semester.

MTC101 Composition I
2 credits Fall Semester
Course covers elementary principles of composition; class performance of composition projects is also included. Required of theory-composition majors.

MTC102 Composition II
2 credits Spring Semester
Continuation of MTC 101.
PREREQUISITE: MTC 101.

MTC107 Skills Ensemble I
1 credit Fall Semester
Chamber-music ensemble (vocal or instrumental) for intensive work on aural skills (transcription, sight-singing, etc.), analysis of literature in and through performance, and improvisation, with focus on music of the Baroque and Classical periods.
PREREQUISITE: APPROPRIATE ACHIEVEMENT ON PLACEMENT EXAM.

MTC108 Skills Ensemble II
1 credit Spring Semester
Chamber-music ensemble (vocal or instrumental) for intensive work on aural skills (transcription, sight-singing, etc.), analysis of literature in and through performance, and improvisation, with focus on music of the Baroque and Classical periods.
PREREQUISITE: MTC 107
MTC109 Music Theory Skills I
3 credits  Fall Semester
A first course in music theory and musicianship for non-music majors; covers basic literacy, fundamentals, tonal harmony, and elements of musical form in a wide variety of traditional and contemporary styles and genres. Includes intensive training in aural and singing skills.
PREREQUISITE: NONE; COURSE FOR NON-MUSIC MAJORS ONLY

MTC110 Music Theory Skills II
3 credits  Spring Semester
Course is designed for students deficient in the knowledge of the basic fundamentals of music. Includes the study of notation, keys, scales, and chord construction. Credits do not count toward music degree requirements.
PREREQUISITE: MTC 109, APPROPRIATE ACHIEVEMENT ON A PLACEMENT EXAMINATION, OR PERMISSION OF THE INSTRUCTOR. COURSE FOR NON-MUSIC MAJORS ONLY.

MTC125 The Nature of Music
3 credits  Fall & Spring Semester
A study of sound, pitch, rhythm, meter, melody, scales, intervals, tempo, expression terms, and highlights of music in history. Enrollment is limited to honors students who are non-music majors.
PREREQUISITE: ADMISSION TO HONORS PROGRAM.

MTC140 Music Theory I
2 credits  Fall Semester
Study of tonal harmony, voice leading, and elements of musical form, covering diatonic procedures and basic modulation, using the chorales of J.S. Bach, with other repertoire, as models for composition.
PREREQUISITE: APPROPRIATE ACHIEVEMENT ON PLACEMENT EXAM.

MTC141 Music Theory II
2 credits  Spring Semester
PREREQUISITE: MTC 140

MTC148 Electronic Music Ensemble
1 credit  Fall & Spring Semester

MTC182 Composition Workshop
1 credit  Fall & Spring Semester

MTC197 Studio Rhythm Section
1 credit  Fall & Spring Semester

MTC199 The Other Music Ensemble
1 credit  Fall & Spring Semester
An in-depth study and performance of 20th century music.

MTC201 Composition III
2 credits  Fall Semester
Principles of composition with special emphasis on stylistic considerations.
PREREQUISITE: MTC 102
MTC202 Composition IV
2 credits
Spring Semester
Continuation of MTC 201.
PREREQUISITE: MTC 201.

MTC203 Pop Composition I
2 credits
Fall Semester
Introduces students to the concept of form in commercial music through a survey
of representative past and current works. Emphasis is placed on acoustic repertoire.
Assignments include lead sheet transcriptions and an introduction to the 3, 4,
and 5-piece rhythm section.
PREREQUISITE: MTC 212 OR MTC 241

MTC204 Pop Composition II
2 credits
Spring Semester
Continuation of MTC 203. Survey of lyrics from different pop genres. Compositional
assignments are for rhythm section and vocalist, and include the writing and setting
of lyrics.
PREREQUISITE: MTC 203

MTC207 Skills Ensemble III
1 credit
Fall Semester
Chamber-music ensemble for intensive work on aural skills (transcription, sight-singing,
sight-reading, etc.), analysis of literature excerpts in performance, and improvisation,
with focus on tonal music of the Classical period and the nineteenth century.
PREREQUISITE: MTC 108

MTC208 Skills Ensemble IV
1 credit
Spring Semester
Chamber-music ensemble for intensive work on aural skills (transcription, sight-singing,
sight-reading, etc.), analysis of literature excerpts in performance, and improvisation,
with focus on selected music of the twentieth century.
PREREQUISITE: MTC 207

MTC240 Music Theory III
2 credits
Fall Semester
Continuation of MTC 141; study of advanced tonal harmony, voice leading, and larger
musical forms, based primarily on music of the Classical period and the nineteenth
century.
PREREQUISITE: MTC 141

MTC241 Music Theory IV
2 credits
Spring Semester
Continuation of MTC 240; study of materials and techniques in composition of music
from the early and middle twentieth century, based on works by Debussy, Stravinsky,
Schoenberg, Bartok, and other models.
PREREQUISITE: MTC 240

MTC301 Composition V
2 credits
Fall & Spring Semester
Individual compositional projects with an emphasis on smaller formal structure.
PREREQUISITE: MTC 202
MTC302 Composition VI
2 credits  Fall & Spring Semester
Individual compositional projects including all media with an emphasis on extended formal structures.
PREREQUISITE: MTC 301.

MTC303 Music for Media
3 credits  Fall Semester
Project-based lecture course designed to provide students the opportunity to compose and realize a varied array of music projects for media applications including music branding "logos" radio/television ID packages, and 30-second television ads. Particular emphasis is placed on technical considerations, aesthetic issues and the psychology of music as they relate to advertising on radio and television.
PREREQUISITE: MTC 204

MTC304 Multimedia Projects.
3 credits  Spring Semester
Project-based lecture course designed to provide students the opportunity to compose and realize the music for a series of commercial multimedia including television program themes/bumpers, sound design and FX, film trailers, and corporate/industrial videos. Emphasis is placed on making appropriate stylistic and compositional choices, as well as developing real-world deadline/time-management skills.
PREREQUISITE: MTC 303

MTC311 Analysis and Expert
3 credits  Fall & Spring Semester & First Summer Session
Musical analysis and its relationship to listening and performance. An introduction to musical aesthetics is also included.
PREREQUISITE: MTC 212 OR MTC 241

MTC312 Twentieth Century Techniques
3 credits  Fall & Spring Semester
Analysis of twentieth century compositional resources. Topics include Impressionism, expanded tonal resources, Neo-classicism, serialism, post-serialism, aleatoric procedures, minimalism, and other recent trends.
PREREQUISITE: MTC 212 OR MTC 241

MTC313 18th Century Counterpoint
3 credits  Fall & Spring Semester
Two-part keyboard counterpoint in the style of J. S. Bach, beginning with a modified species approach and including composition of dance-suite movements and inventions. Introduction to three-part writing is also included.
PREREQUISITE: MTC 211 OR MTC 240

MTC401 Composition VII
2 credits  Fall & Spring Semester
Individual compositional projects including all media with an emphasis on advanced problems in composition.
PREREQUISITE: MTC 302

MTC402 Composition VIII
2 credits  Fall & Spring Semester
Advanced Composition. Continuation of MTC 401.
PREREQUISITE: MTC 401
MTC403 Advanced Music Editing.

3 credits  Fall Semester
Project-based practicum course designed to provide students the opportunity to compose record and reproduce a wide variety of music projects that combine the use of pre-existing as well as new musical elements. Particular emphasis is placed on technical considerations, aesthetic issues, and the commercial viability of the end product.
PREREQUISITE: MTC 304

MTC404 Live Performance Musical Direction

3 credits  Spring Semester
Project-based practicum course in collaboration with other Performance department, designed to provide students the opportunity to prepare music for a live concert and serve as Musical Director (MD) thereof. Particular emphasis is placed on musical material (repertoire, arrangements, score/parts preparation), rehearsal techniques, and real-time/live performance direction/conducting.
PREREQUISITE: MTC 403

MTC416 Orchestration

3 credits  Fall & Spring Semester & Second Summer Session
The uses and possibilities of orchestral instruments as well as scoring for various instrumental groups, including the symphony orchestra.
PREREQUISITE: MTC 211 OR MTC 240

MTC452 Media Production Project Lab

2 credits  Spring Semester
Laboratory component to MTC 404. Course can only be taken concurrently with MTC 404.

MTC493 Special Projects

1-3 credits  Fall & Spring Semester & First & Second Summer Session
Supervised reading, composition, and other activities in specific areas.
PREREQUISITE: UNDERGRADUATE MUSIC STUDENTS ONLY. DEAN'S APPROVAL AND SIGNATURE REQUIRED.

MTC499 Senior Recital

1 credit  Fall & Spring Semester
A public recital of original compositions required of all Music Composition majors.

MTC501 The Aesthetics of Music

3 credits  Spring Semester
Survey of thought and discourse about the nature, roles, values, experiences, and meanings of music. Variety of perspectives, including those of the listener, performer, and composer are addressed. Application to musical interpretation and criticism is included.
PREREQUISITE: MTC 311 OR 312 OR GRADUATE STANDING.
MTC505 Analysis and History of Electroacoustic and Acousmatic Music
2 credits
Fall Semester
Introduction to electroacoustic music and the digital electronic music studio. Computer and MIDI based applications in performance and composition including sequencing, music notation, and electronic orchestration are addressed. Theoretical and aesthetic issues relating to music technology, study of important figures and works. Lectures, reading, listening, and studio assignments leading to individual projects are also included.
PREREQUISITE: MTC 312 OR PERMISSION

MTC506 Digital Editing and Sequencing
2 credits
Spring Semester
Computers as control devices for music synthesis. Topics include interfacing microcomputers and synthesizers, programming of controllers, sequencers, patch librarians, sound editors, and other applications. Computer assisted composition and performance techniques, lectures, reading, listening, and studio assignments leading to individual projects are also included.

MTC507 Studio Licensing
2 credits
Fall & Spring Semester
Software-based techniques of digital audio recording and editing, sound synthesis/design, audio signal processing, and sound analysis. Lectures, reading, listening, and studio assignments leading to individual projects in synthesis, composition, performance, or programming are included.
PREREQUISITE: MTC 506

MTC511 Film Scoring I
2 credits
Fall Semester
Seminar in the aesthetics and psychology of mood music, sound-film synchronization, timing techniques, and scoring procedures. Analysis and performance of student projects is included.
PREREQUISITE: MTC 302

MTC512 Film Scoring II
2 credits
Spring Semester
Adaptation of previous semester's techniques to television scripts and performed music. Pre-recording, direct recording, and dubbing procedures are included as well as preparation and performance of complete film cues. Each student is required to conduct his/her project.
PREREQUISITE: MTC 511.

MTC513 16th Century Counterpoint
3 credits
Offered By Announcement Only
Two- and three-voice vocal counterpoint based on Palestrina's style, beginning with studies of strict species and including composition of two- and three-voice texted motets.
PREREQUISITE: MTC 211 OR MTC 240

MTC515 Choral Arranging
3 credits
Spring Semester
Arranging for choir and vocal groups with and without instrumental accompaniment in all styles.
PREREQUISITE: MTC 212 OR MTC 241
MTC516 Advanced Orchestration
3 credits
Spring Semester
Scoring for the symphonic orchestra with an emphasis on recent techniques.
PREREQUISITE: MTC 416

MTC517 Analysis of Popular Music Since 1950
3 credits
Offered By Announcement Only
Course examines popular music in the second half of the Twentieth Century from a music analytical perspective. Critical skills needed for this analysis are identified and developed. Analytical techniques for understanding the determination and utilization of musical elements and structures in contemporary popular music are applied. Various contemporary genres and some precursors are examined and particular stylistic determinants of their compositional and performance models are discussed.
PREREQUISITE: GRADUATE STANDING OR MTC 311 OR 312, OR PERMISSION OF THE INSTRUCTOR.

MTC518 Advanced Counterpoint
3 credits
Spring Semester
Three-voice fugal writing in Bach's style, followed by compositional projects in a variety of twentieth-century contrapuntal styles.
PREREQUISITE: MTC 313

MTC521 Multimedia for Musicians
3 credits
Offered By Announcement Only
Presents an overview and introduction to the creation of multimedia projects for presentation on the Web. Focus is placed on building websites, and the creation of multimedia content for online delivery. Software tools for the manipulation of digital media, including audio and video, are utilized in the realization of course projects.
PREREQUISITE: MTC 212 AND MKP 220, OR MTC 241 AND MMI 240 AND 241, OR GRADUATE STANDING.

MTC567 Electronic and Computer Music Seminar
1-3 credits
Fall & Spring Semester
Advanced techniques and applications in electronic and computer music. Topics may include electronic projects in composition, performance, research, programming, or other as approved by instructor.
PREREQUISITE: MTC 505, 506, 507

MTC593 Special Topics MTC
1-3 credits
Fall & Spring Semester & First & Second Summer Session
Supervised topics and other activities in specific areas of Music Theory-Composition.
PREREQUISITE: DEAN'S APPROVAL AND SIGNATURE REQUIRED

MUSICOLOGY
MCY007 B.A. in Music Forum
0 credit
Fall & Spring Semester
Forum for this major will provide programs on and discussion of the role of the musical arts in society for people in a wide range of careers.
PREREQUISITE: NONE

MCY016 Musicology Forum
0 credit
Offered By Announcement Only
A weekly forum for all Musicology majors. This course involves guest lectures by local and visiting scholars, presentations of student and faculty research, and group discussions centered on principal ideas, methods, and approaches in the field.
MCY124 The Evolution of Jazz  
3 credits  
Fall & Spring Semester & First Summer Session  
A study of the origin, development, and styles of jazz music and its exponents.

MCY127 Evolution of Rock  
3 credits  
Fall & Spring Semester & Second Summer Session  
Rock music from its sources to the present. Aural recognition of rock styles and selected performing artists are included.

MCY131 Understanding Music  
3 credits  
Fall & Spring Semester  
A general introduction to the musical elements and the history of music from antiquity to the present. Primarily focuses on classical music, but also includes exposure to pop, jazz, and music traditions.  
PREREQUISITE: NONE

MCY140 Experiencing Music  
2 credits  
Fall Semester  
A broad introduction to musical elements, genres, periods, styles, and composers in the classical, jazz, popular, and world music traditions.  
PREREQUISITE: MUSIC MAJORS ONLY.

MCY141 Musical Trends and Traditions  
2 credits  
Spring Semester  
A study of genres, periods, styles, and composers in the classical, jazz, and popular music traditions.  
PREREQUISITE: MCY 140

MCY211 African-American Song Traditions  
3 credits  
Fall Semester  
A study of the origins, development, and styles of African American song traditions from early plantation songs, shouts, hollers, and spirituals, to the development of blues traditions, to gospel. Areas to be explored include the development of an African American cultural consciousness and the political and socio-economic influences on the content and musical styles.  
PREREQUISITE: NONE

MCY212 Anglo-American Song Traditions  
3 credits  
Spring Semester  
A study of the origins, development, and styles of Anglo-American song traditions from English and Irish folk ballads, to shape-note and Sacred Harp hymnody, to early folk, country and bluegrass. Areas to be explored include the development of an American cultural identity and the political and socio-economic influences on the content and musical styles.  
PREREQUISITE: NONE

MCY311 Modern American Pop Music I  
3 credits  
Fall Semester  
A study of the development and styles of American Popular Music from the late-1950s to the late-1970s. Areas to be explored include influential songwriters and performers and stylistic development in their political and socio-economic context.  
PREREQUISITE: NONE
MCY312 Modern American Pop Music II  
3 credits  
Spring Semester  
A study of the development and styles of American Popular Music from the early-1980s to the present. Areas to be explored include influential songwriters and performers and stylistic development in their political and socio-economic context.  
PREREQUISITE: NONE

MCY313 Music of Latin America  
3 credits  
Fall & Spring Semester  
An introduction to the music of Latin America, with special emphasis on Mexico, Brazil, Argentina, the Andes, and the Caribbean. Covers folk, popular, and classical music traditions. Open to non-music majors.  
PREREQUISITE: NONE

MCY324 Music in Hebrew Culture  
3 credits  
Spring Semester  
A study of the folk, traditional, liturgical, and art music of the Jews. Particular attention is given to music on Jewish subjects, music employing traditional Jewish resources, and music by contemporary Jewish and Israeli composers.

MCY333 Introduction to Cuban Music  
3 credits  
Fall & Spring Semester  
A survey of Cuban Music from the early European settlement to the present. Course addresses African and Caribbean influences and the amalgamation into new national styles, as well as current musical activity on the island and in expatriate communities.

MCY493 Special Projects  
1-3 credits  
Fall & Spring Semester & First & Second Summer Session  
Supervised readings and other activities in specific areas of Musicology.  
PREREQUISITE: UNDERGRADUATE MUSIC STUDENTS ONLY. DEAN’S APPROVAL AND SIGNATURE REQUIRED.

MCY520 History and Literature of the Wind Band  
3 credits  
Fall Semester  
An historical survey of wind band literature, the evolution of the military band, the wind band, and the wind orchestra.

MCY521 Symphonic Literature  
3 credits  
Spring Semester  
A survey of orchestral music from the end of the seventeenth century to the present.

MCY522 Operatic Literature  
3 credits  
Spring Semester  
The history and literature of opera from the end of the sixteenth century to the present.

MCY524 Contemporary Music  
3 credits  
Fall Semester  
Music of the 20th century, with emphasis on developments since 1945.

MCY525 Art Song Literature  
3 credits  
Spring Semester  
A survey of the solo vocal literature from the 16th century to the present, with particular emphasis on the 19th-century French and German repertoire.
MCY526 Keyboard Literature I
3 credits  Fall Semester
A survey of keyboard literature from its beginning to approximately 1750 emphasizing changes in styles of writing and expression, development of techniques suited to the primary instruments in use (including the early organ, clavichord, harpsichord and fortepiano), ornamentation both specified and improvised, forms, and ideas for interpretation based on historical sources.

MCY527 Keyboard Literature II
3 credits  Spring Semester
A survey of solo keyboard literature from approximately 1750 to the present emphasizing changes in styles of writing and expression, development of technique suited to the primary instruments in use (including the clavichord, harpsichord, fortepiano and modern piano), embellishment both specified and improvised, forms, and ideas for interpretation based on historical sources (including facsimiles, printed scores, written records and sound recordings, particularly those by the composers themselves).

MCY528 Music Bibliography
3 credits  Fall Semester
Course presents research materials, including dictionaries, encyclopedias, historical collections, scholarly editions, complete works, books, articles, and lists dealing with specialized areas of music history and literature.
PREREQUISITE: GRADUATE STANDING, OR PERMISSION OF INSTRUCTOR.

MCY529 Music of the Baroque Period
3 credits  Spring Semester
Literature and history of music from the end of the sixteenth to the middle of the eighteenth centuries.
PREREQUISITE: SIX CREDITS OF UNDERGRADUATE MUSIC HISTORY.

MCY530 Music of the Classical Period
3 credits  Fall Semester
The musical styles which developed between the mid-eighteenth century and the nineteenth century.

MCY532 History of Chamber Music
3 credits  Fall Semester
Styles and forms in chamber music literature from the seventeenth century to the present.

MCY533 Music of the Romantic Period
3 credits  Spring Semester
The musical styles which developed during the nineteenth century.
PREREQUISITE: SENIOR STANDING OR PERMISSION OF INSTRUCTOR.

MCY535 Choral Literature I
2 credits  Fall Semester
Choral music of the sixteenth through the eighteenth centuries. A combination of lecture-discussion and class performance.

MCY536 Choral Literature II
2 credits  Fall Semester
Choral music of the nineteenth and twentieth centuries. A combination of lecture-discussion and class performance.
MCY537 Music in the United States

3 credits  
Spring Semester

A survey of music in the United States from colonial times to the present, with emphasis on the social, economic, and political conditions which affected it. Art music (sacred and secular), popular music in all idioms, the music industry as it evolved in the U.S., and the influence of American music on the music of other countries.

MCY538 Music, Gender, and Sexuality

3 credits  
Spring Semester

An exploration of music from around the world from the perspective of women. We will examine the roles women have played, and still play, as creators and performers in art music and popular music traditions. Representations of women and gender ideologies will also be discussed.

MCY541 Music of the Mediaeval, Renaissance, and Baroque Periods

3 credits  
Fall Semester & First Summer Session

A comprehensive, in-depth study of the musical styles and genres of the Mediaeval, Renaissance, and Baroque Eras. Important musical figures of these periods and analytical studies of important pieces of music from these periods are addressed.

MCY542 Music of the Classical, Romantic, and Modern Periods

3 credits  
Spring Semester & Second Summer Session

A comprehensive, in-depth study of the musical styles and genres of the Classical, Romantic, and Modern Eras of important musical figures of these periods, and analytical studies of important pieces of music from these periods.

MCY553 Miami’s Musical Heritage

3 credits  
Spring Semester & First Summer Session

A study of the musical traditions and practices of the various cultures that are part of Miami’s unique multi-ethnic society.

MCY554 Music Cultures of the World: Argentina and Brazil

3 credits  
Offered By Announcement Only

A study of music culture of the region including the music of folk societies, popular artists, and classical musicians. Open to non-majors. PREREQUISITE: UPPERCLASS STANDING OR PERMISSION OF THE INSTRUCTOR.

MCY562 Music of Argentina and Brazil

3 credits  
Spring Semester

An in-depth study of Argentine and Brazilian musical cultures covering folk, popular, and classical traditions. Open to non-majors.

MCY564 Seminar in Latin American Music Collections

3 credits  
Fall Semester

Examines Latin American music materials at the Cuban Heritage Collection and Special Collections at the Richter Library. Focuses on interpreting original documents and acquiring archival techniques. PREREQUISITE: MINIMUM JUNIOR STANDING. READING KNOWLEDGE OF SPANISH.
MCY583 History of the American Musical Theatre
3 credits Fall Semester
An examination of the development of musical theatre from its European opera and operetta background to an indigenous American art form. The areas to be explored include the rise and fall of various genre of musical shows, integration of story, song and dance, important producers, directors, lyricists, composers, and new fields such as director-choreographer. The development of an American cultural consciousness and political and socio-economic trends of various decades that greatly influenced the content and form of musical shows is also examined.

MCY593 Special Topics MCY
1- 3 credits Fall & Spring Semester & First & Second Summer Session
Supervised topics and other activities in specific areas of Musicology.
PREREQUISITE: DEAN'S APPROVAL AND SIGNATURE REQUIRED

STUDIO MUSIC & JAZZ

MSJJBA Jazz Bass
1- 2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Basic techniques, sight-reading. Major, minor, diminished, and whole tone scales. Chord structure and analysis. Bass line construction, basis of walking lines. Voice leading for bass lines and improvisation. Etudes and studies in all styles. Repertoire: Standards and Jazz.
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MSJJBB Jazz Bass
1- 2 credits Fall & Spring Semester
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY

MSJJBC Jazz Bass
1- 2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Previous materials in addition to solo bass techniques. Advanced arpeggios and scales. Pentatonic theory and applications. Improvisational vocabulary (traditional).
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJJBD Jazz Bass
1- 2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Previous materials in addition to solo bass techniques. Advanced arpeggios and scales. Pentatonic theory and applications. Improvisational vocabulary (traditional).
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MSJJBE Jazz Bass  
1-2 credits  
Fall & Spring Semester  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Previous materials in addition to advanced harmonic applications. Expanding traditional improvisational vocabulary. Creating original vocabulary. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJJBF Jazz Bass  
1-2 credits  
Fall & Spring Semester  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Previous materials in addition to advanced harmonic applications. Expanding traditional improvisational vocabulary. Creating original vocabulary. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJJBG Jazz Bass  
1-2 credits  
Fall & Spring Semester  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Previous materials in addition to recital preparation. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJJBH Jazz Bass  
1-2 credits  
Fall & Spring Semester  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Previous materials in addition to recital preparation. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJJDA Jazz Drumset  
1-2 credits  
Fall & Spring Semester  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Sticking technique, basic hand/foot patterns. Analysis of styles, history of drum set. Rhythm section interaction. Basic transcription, chart reading. PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MSJJDB Jazz Drumset  
1-2 credits  
Fall & Spring Semester  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Sticking technique, basic hand/foot patterns. Analysis of styles, history of drum set. Rhythm section interaction. Basic transcription, chart reading. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJJDC Jazz Drumset  
1-2 credits  
Fall & Spring Semester  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Advanced analysis or major drum set artists. Advanced transcription. Soloing over form using motives, dynamics, and subdivision, comping patterns. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MSJJDD Jazz Drumset
1- 2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Advanced analysis or major drum set artists. Advanced transcription. Soloing over form using motives, dynamics, and subdivision, comping patterns.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJJDE Jazz Drumset
1- 2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Advanced jazz styles and comping, odd note groupings, advanced chart reading, advanced hand/foot patterns.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJJDF Jazz Drumset
1- 2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Advanced jazz styles and comping, odd note groupings, advanced chart reading, advanced hand/foot patterns.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJJDG Jazz Drumset
1- 2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Displacement, metric modulation, preparation for recital, developing an individual voice.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJJDH Jazz Drumset
1- 2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Displacement, metric modulation, preparation for recital, developing an individual voice.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJJGA Jazz Guitar
1- 2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Left and right hand development. Basic fretboard theory including arpeggios, voice leading (2 string studies), blues and bebop scales. Accompanying: 3-note voicing. Introduction to transcription. Application of the concepts studied to basic repertoire.
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MSJJGB Jazz Guitar
1- 2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Left and right hand development. Basic fretboard theory including arpeggios, voice leading (2 string studies), blues and bebop scales. Accompanying: 3-note voicings. Introduction to transcription. Application of the concepts studied to basic repertoire.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY
MSJJGC Jazz Guitar
1- 2 credits  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Further development of repertoire and continuation of technical studies. Improvisation using arpeggios with tension substitutions. Application of major and melodic minor modes. More advanced transcriptions and refinement of time feel. 
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJJGD Jazz Guitar
1- 2 credits  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Further development of repertoire and continuation of technical studies. Improvisation using arpeggios with tension substitutions. Application of major and melodic minor modes. More advanced transcriptions and refinement of time feel. 
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJJGE Jazz Guitar
1- 2 credits  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Works by Bach, Galbraith and others. Building of standard/jazz repertoire including works by Arlen, Porter, Kern, Parker, Ellington, etc. Improvisation and harmonic studies based on the foregoing. Ear training as required. Use of Jamey Aebersold play-along series. 
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJJGF Jazz Guitar
1- 2 credits  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Works by Bach, Galbraith and others. Building of standard/jazz repertoire including works by Arlen, Porter, Kern, Parker, Ellington, etc. Improvisation and harmonic studies based on the foregoing. Ear training as required. Use of Jamey Aebersold play-along series. 
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJJGG Jazz Guitar
1- 2 credits  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. More advanced repertoire (works by Corea, Hancock, etc.). Continued expansion of harmonic concepts and exploration of chord voicings and applications. Use of Aebersold series. Assistance with senior recital preparation. 
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJJGH Jazz Guitar
1- 2 credits  
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. More advanced repertoire (works by Corea, Hancock, etc.). Continued expansion of harmonic concepts and exploration of chord voicings and applications. Use of Aebersold series. Assistance with senior recital preparation. 
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MSJJPA Jazz Piano
1-2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technique: Major and melodic minor scales in all keys and diminished and blues scales in all keys, in both hands in at least two octaves with a swing (triplet) subdivision. Student should demonstrate the ability to solve fingering problems when ascending and descending the keyboard diatonically. Introduction to the ii-V7-I chord progression in all keys as applied to tunes which have a harmonic rhythm of one change per bar such as Cherokee (Noble) and I Love You (Porter). Literature: Study of the twelve-bar blues progression, including tunes such as "Now's The Time" (Parker), Billie's Bounce (Parker), Blue Monk (Monk). Memorization of at least two tunes per lesson in their original key, at least 75% of which should be tunes in the "American standard" format featuring composers such as Berlin, Porter, Kahn, Gershwin, etc. All of the above to be performed with bass accompaniment. Introduction to the use of Aebersold recordings.
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MSJJPB Jazz Piano
1-2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technique: Major and melodic minor scales in all keys and diminished and blues scales in all keys, in both hands in at least two octaves with a swing (triplet) subdivision. Student should demonstrate the ability to solve fingering problems when ascending and descending the keyboard diatonically. Introduction to the ii-V7-I chord progression in all keys as applied to tunes which have a harmonic rhythm of one change per bar such as Cherokee (Noble) and I Love You (Porter). Literature: Study of the twelve-bar blues progression, including tunes such as "Now's The Time" (Parker), Billie's Bounce (Parker), Blue Monk (Monk). Memorization of at least two tunes per lesson in their original key, at least 75% of which should be tunes in the "American standard" format featuring composers such as Berlin, Porter, Kahn, Gershwin, etc. All of the above to be performed with bass accompaniment. Introduction to the use of Aebersold recordings.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJJPC Jazz Piano
1-2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technique: Arpeggiation of major, minor, diminished and augmented seventh chords, in both hands and in at least two octaves with a swing (triplet) subdivision. Introduction to melodic harmonization through practice of "Shearing Style" and "Drop Two" scale exercises. Introduction of the ii-V7-I chord progression in all keys as applied to tunes which have a harmonic rhythm of two changes per bar such as Confirmation (Parker) and in Your Own Sweet Way (Brubeck). Literature: Study of the "I Got Rhythm" chord progression. Memorization of at least two tunes per lesson in their original key, at least 75% of which should be tunes in the "American standard" format featuring composers such as Berlin, Porter, Kahn, Gershwin, etc. All of above to be performed with bass accompaniment, or in solo piano format. Study, performance and analysis of transcribed solos such as those found in the Omnibook (Parker). Introduction to solo piano format through study of transcribed pieces.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MSJJPD Jazz Piano
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technique: Arpeggiation of major, minor, diminished and augmented seventh chords, in both hands and in at least two octaves with a swing (triplet) subdivision. Introduction to melodic harmonization through the practice of "Shearing Style" and "Drop Two" scale exercises. Introduction of the ii-V7-I chord progression in all keys as applied to tunes which have a harmonic rhythm of two changes per bar such as Confirmation (Parker) and in Your Own Sweet Way (Brubeck). Literature: Study of the "I Got Rhythm" chord progression. Memorization of at least two tunes per lesson in their original key, at least 75% of which should be tunes in the "American standard" format featuring composers such as Berlin, Porter, Kahn, Gershwin, etc. All of the above to be performed with bass accompaniment, or in solo piano format. Study, performance and analysis of transcribed solos such as those found in the Omnibook (Parker). Introduction to solo piano format through study of transcribed pieces.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJJPE Jazz Piano
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technique: Selected exercises from the Dohnanyi or Pishna exercise books. Augmented scales and modes of major in all keys, in both hands and in at least two octaves with a swing (triplet) subdivision. Introduction to modal harmony and sideslipping through study of plateau modal compositions (tunes with long sections of the same modality.) Pentatonic scales in all keys. Literature: Blues in the stride solo piano format. Analysis and transcription of artists who played in this style such as Tatum, Johnson, Smith, and Peterson. Memorization of at least two tunes per lesson in at least three key centers, at least 75% of which should be tunes in the "American standard" format featuring composers such as Berlin, Porter, Kahn, Gershwin, etc. All of the above to be performed both with bass accompaniment and in solo piano format with sections in stride style. Introduction to the Bill Evans piano style through performance of his transcribed piano pieces.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJJPF Jazz Piano
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technique: Selected exercises from the Dohnanyi or Pishna exercise books. Augmented scales and modes of major in all keys, in both hands and in at least two octaves with a swing (triplet) subdivision. Introduction to modal harmony and sideslipping through study of plateau modal compositions (tunes with long sections of the same modality.) Pentatonic scales in all keys. Literature: Blues in the stride solo piano format. Analysis and transcription of artists who played in this style such as Tatum, Johnson, Smith, and Peterson. Memorization of at least two tunes per lesson in at least three key centers, at least 75% of which should be tunes in the "American standard" format featuring composers such as Berlin, Porter, Kahn, Gershwin, etc. All of the above to be performed both with bass accompaniment and in solo piano format with sections in stride style. Introduction to the Bill Evans piano style through performance of his transcribed piano pieces.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MSJJPG Jazz Piano
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technique: Selected exercises from the Dohnanyi or Pishna exercise books. Augmented scales and modes of major in all keys, in both hands and in at least two octaves with a swing (triplet) subdivision. Introduction to modal harmony and sideslipping through study of plateau modal compositions (tunes with long sections of the same modality.) Pentatonic scales in all keys. Literature: Blues in the stride solo piano format. Analysis and transcription of artists who played in this style such as Tatum, Johnson, Smith, and Peterson. Memorization of at least two tunes per lesson in at least three key centers, at least 75% of which should be tunes in the "American standard" format featuring composers such as Berlin, Porter, Kahn, Gershwin, etc. All of the above to be performed both with bass accompaniment and in solo piano format with sections in stride style. Introduction to the Bill Evans piano style through performance of his transcribed piano pieces. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJJPH Jazz Piano
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technique: Selected exercises from the Dohnanyi or Pishna exercise books. Augmented scales and modes of major in all keys, in both hands and in at least two octaves with a swing (triplet) subdivision. Introduction to modal harmony and sideslipping through study of plateau modal compositions (tunes with long sections of the same modality.) Pentatonic scales in all keys. Literature: Blues in the stride solo piano format. Analysis and transcription of artists who played in this style such as Tatum, Johnson, Smith, and Peterson. Memorization of at least two tunes per lesson in at least three key centers, at least 75% of which should be tunes in the "American standard" format featuring composers such as Berlin, Porter, Kahn, Gershwin, etc. All of the above to be performed both with bass accompaniment and in solo piano format with sections in stride style. Introduction to the Bill Evans piano style through performance of his transcribed piano pieces. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJJSA Jazz Saxophone
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Introduction to principals of saxophone acoustics; introduction to tone production, intonation, tonal color, and blend; basic technique, chords and scale studies; jazz phrasing; establishment of a "tune list" (repertoire); study of improvised Solos through transcription; major scales full range, thirds, diatonic seventh chords in level A and in level B, melodic minor scales full range, thirds, diatonic seventh chords. PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.
University of Miami Bulletin, 2012-2013
Undergraduate Course Listing
SCHOOL OF MUSIC
STUDIO MUSIC & JAZZ

MSJJSB Jazz Saxophone
1-2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students
enrolled for 1 credit. Technical Requirements: Introduction to principals of saxophone
acoustics; introduction to tone production, intonation, tonal color, and blend;
basic technique, chords and scale studies; jazz phrasing; establishment of a "tune
list" (repertoire); study of improvised Solos through transcription; major scales
full range, thirds, diatonic seventh chords in level A and in level B, melodic
minor scales full range, thirds, diatonic seventh chords.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJJSC Jazz Saxophone
1-2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students
enrolled for 1 credit. Technical Requirements: Continuation of earlier levels
as needed; diminished scales; pentatonic scales/patterns; extended range exercises;
application of melodic minor/pentatonic scales; chromatic scale extensions; tritone
substitutions.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJJSB Jazz Saxophone
1-2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students
enrolled for 1 credit. Technical Requirements: Continuation of earlier levels
as needed; diminished scales; pentatonic scales/patterns; extended range exercises;
application of melodic minor/pentatonic scales; chromatic scale extensions; tritone
substitutions.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJSE Jazz Saxophone
1-2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students
enrolled for 1 credit. Technical Requirements: Continuation of tone and technique
as needed; augmented scale; rhythmic exercises from drum methods; continue extended
range studies; a cappella improvisation; studies in melodic/rhythmic development.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJSSF Jazz Saxophone
1-2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students
enrolled for 1 credit. Technical Requirements: Continuation of tone and technique
as needed; augmented scale; rhythmic exercises from drum methods; continue extended
range studies; a cappella improvisation; studies in melodic/rhythmic development.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJSSG Jazz Saxophone
1-2 credits Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students
enrolled for 1 credit. Recital Preparation. Building of repertoire; concentration
on selected influential composers: Ellington, Shorter, Hancock, Miller, Silver,
Jobim, Golson, Lieberman, etc. Review of teaching methods, materials. Advanced
technique studies: Bozza Etudes Caprices, Lacour 8 Difficult studies. Topics of
interest as decided by student in consultation w/teacher. Total 80 tunes (minimum)
by end of H level.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MSJJSH Jazz Saxophone
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Recital Preparation. Building of repertoire; concentration on selected influential composers: Ellington, Shorter, Hancock, Miller, Silver, Jobim, Golson, Lieberman, etc. Review of teaching methods, materials. Advanced technique studies: Bozza Etudes Caprices, Lacour 8 Difficult studies. Topics of interest as decided by student in consultation w/teacher. Total 80 tunes (minimum) by end of H level.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJTBA Jazz Trombone
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Daily routine/classical etudes. Major, melodic minor, diminished scales, Dorian and Mixolydian modes, dominant 7th arpeggios, minor 7th arpeggios. All major and minor 3rds followed by respective dominant 7ths.
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MSJTBB Jazz Trombone
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Daily routine/classical etudes. Major, melodic minor, diminished scales, Dorian and Mixolydian modes, dominant 7th arpeggios, minor 7th arpeggios. All major and minor 3rds followed by respective dominant 7ths.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJTBC Jazz Trombone
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Previous material in addition to blues and rhythm changes in 12 keys. Voice Leading (3rds and 7ths). Transcription techniques/assigned transcriptions. Standard tunes (1 per week).
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJTBD Jazz Trombone
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Previous material in addition to blues and rhythm changes in 12 keys. Voice Leading (3rds and 7ths). Transcription techniques/assigned transcriptions. Standard tunes (1 per week).
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJTBE Jazz Trombone
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Previous material, in addition to standard tunes (2 per week). 251 licks in major and minor. Diminished patterns.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MSJTBF Jazz Trombone
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Previous material, in addition to standard tunes (2 per week). 251 licks in major and minor. Diminished patterns. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJTBG Jazz Trombone
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Previous material in addition to augmented scales and patterns. Pentatonic scales and patterns. Recital preparation. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJTBH Jazz Trombone
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Previous material in addition to augmented scales and patterns. Pentatonic scales and patterns. Recital preparation. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJTPA Jazz Trumpet
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Concentration on basic trumpet skills, utilizing the Arbans and Clarke technical studies book. Proper breathing techniques. Major and diminished whole tone scales. Jazz tonguing. Standard jazz repertoire. PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MSJTPB Jazz Trumpet
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Concentration on basic trumpet skills, utilizing the Arbans and Clarke technical studies book. Proper breathing techniques. Major and diminished whole tone scales. Jazz tonguing. Standard jazz repertoire. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJTPC Jazz Trumpet
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Continuation of basic skills in addition to range studies utilizing the Wedge breath. Transcribing jazz trumpet solos. A cappella blues in all keys. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJTPD Jazz Trumpet
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Continuation of basic skills in addition to range studies utilizing the Wedge breath. Transcribing jazz trumpet solos. A cappella blues in all keys. PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MSJTPE Jazz Trumpet
1-2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Continuation of range studies in addition to advanced etudes such as Bitsch and Charlier. Advanced jazz repertoire. Diminished and augmented scales. Studio techniques.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJTPF Jazz Trumpet
1-2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Continuation of range studies in addition to advanced etudes such as Bitsch and Charlier. Advanced jazz repertoire. Diminished and augmented scales. Studio techniques.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJTPG Jazz Trumpet
1-2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Study of advanced jazz repertoire. Recital preparation.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJTPH Jazz Trumpet
1-2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Study of advanced jazz repertoire. Recital preparation.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJVOA Jazz Voice
1-2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirement: Warm-ups, Cool downs and introductory exercises for breath management. Attack in phonation, registration, resonance, articulation, coordination, microphone technique, key selection and vocal hygiene and maintenance. Repertoire: 25 Songs: 6 swing, 6 traditional ballad, 5 bossa/samba, 2 blues/funk, contemporary ballad, 4 student choice.
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MSJVOB Jazz Voice
1-2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirement: Warm-ups, Cool downs and introductory exercises for breath management. Attack in phonation, registration, resonance, articulation, coordination, microphone technique, key selection and vocal hygiene and maintenance. Repertoire: 25 Songs: 6 swing, 6 traditional ballad, 5 bossa/samba, 2 blues/funk, contemporary ballad, 4 student choice.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MSJVOC Jazz Voice
1- 2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Repertoire: 24 Songs: 16 selections from Swing, Ballad, Jazz Waltz and Latin idioms. 4 Rock/Funk/R&B arrangements in coordination with MSJ 301. Mini-Concert (4 song set) Note: Sophomore proficiency.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJVOE Jazz Voice
1- 2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Repertoire: 15 Songs, continuation of standard repertoire at more advance and complex level, including bebop, original material, modal tunes and selections of harmonic and melodic complexity with improvisation.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJVOF Jazz Voice
1- 2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Repertoire: 15 Songs, same styles as above, Recital preparation, review of repertoire list and audition preparation.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJVOG Jazz Voice
1- 2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Repertoire: 15 Songs, same styles as above, Recital preparation, review of repertoire list and audition preparation.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJVOH Jazz Voice
1- 2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Repertoire: 15 Songs, same styles as above, Recital preparation, review of repertoire list and audition preparation.
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MSJ003 Jazz Forum
0 credit  Fall & Spring Semester
A weekly meeting of jazz students and faculty for performance, master classes, clinics presented by students, faculty and guest artists.
MSJ011 Saxophone Forum
0 credit  Fall & Spring Semester
Course provides a weekly forum for all saxophone principals. Student performances, guest artists, master classes, and listening to selected recordings are part of the curriculum.
PREREQUISITE: SAXOPHONE PRINCIPAL.

MSJ018 Jazz Vocal Forum
0 credit  Fall & Spring Semester
A weekly meeting of the jazz vocal students and faculty dedicated to student performances, ensemble performances, and guest artist performances and workshops.

MSJ088 Jazz Piano Forum
0 credit  Fall & Spring Semester
Jazz Piano Forum is a weekly performance venue for jazz piano principals and majors which may include guest clinicians and artists.

MSJ107 Skills Ensemble I
1 credit  Fall Semester
Chamber music performance of selected repertoire with a concentration in Bebop and the music of Charlie Parker, Dizzy Gillespie, and Thelonius Monk, along with secondary figures from the Be-Bop era 1945-1955. Additional repertoire from a list of American standards will also be assigned. Class sessions will cover historical/stylistic performance practice, aural skills, (transcription, analysis, sight-reading, etc.) and Jazz arranging for small ensembles.

MSJ108 Skills Ensemble II
1 credit  Spring Semester
Chamber music performance of selected repertoire with a concentration in Jazz and popular music in America in the 1950's, including the repertoire of prominent popular music composers such as George Gershwin, Cole Porter, Richard Rodgers, and others. Class sessions will cover historical/stylistic performance practice, aural skills (transcription, analysis, sight-reading, etc.) and Jazz arranging for small ensembles.
PREREQUISITE: MSJ 107

MSJ111 Jazz Vocal Techniques I
1 credit  Fall Semester
Analysis and application of singing styles and attendant skills, techniques and repertoire required in performance and recording of jazz, popular music, and other current idioms.

MSJ112 Jazz Vocal Techniques II
1 credit  Spring Semester
Vocational Coaching of swing and traditional ballad styles with emphasis on communication of lyric content and phrasing.
PREREQUISITE: MSJ 111

MSJ113 Analysis and Evolution of Jazz Styles I
3 credits  Spring Semester
An overview of the musical styles and genres of the late nineteenth and early twentieth century leading to the development of Jazz music. Then an in-depth study of early Jazz in America and its innovators, including Louis Armstrong, Jelly Roll Morton, and Duke Ellington. Also, a survey of the major style periods of Modern Jazz from 1945 to the present, including prominent artists from each style period.
PREREQUISITE: NONE.
MSJ124 Introduction to Jazz Improvisation
3 credits          Fall & Spring Semester
Introduction to the harmonic, melodic, and rhythmic techniques of Jazz Improvisation.

MSJ125 Introduction to Jazz Vocal Improvisation.
3 credits                             Spring Semester
Introduction to the harmonic, melodic, and rhythmic techniques of Jazz Improvisation.

MSJ134 E.C.M. Ensemble
1 credit                          Fall & Spring Semester
This ensemble performs music typical of the contemporary European jazz styles such as those characterized by the Edition of Contemporary Music (E.C.M.) Recording Company.

MSJ138 Vocal Recording Ensemble
1 credit                          Offered By Announcement Only
Weekly recording sessions and instruction in recording studio performance techniques including skill training in sight reading, vocal production, and diction applied to group and solo singing styles.

MSJ139 Small Jazz Vocal Ensemble
1 credit                             Fall & Spring Semester

MSJ140 Small Jazz Ensemble
1 credit                             Fall & Spring Semester

MSJ141 Small Jazz Ensemble I
1 credit                             Fall & Spring Semester
Group instruction in the various styles of contemporary jazz. Students will acquire improvisational skills while learning repertoire and performance techniques, and strengthen compositional and arranging skills by contributing original compositions and arrangements to the ensemble's repertoire.

MSJ142 Small Jazz Ensemble II
1 credit                             Fall & Spring Semester
This ensemble focuses on sectional playing, blend, and musical interpretation. Students will be required to perform in sections of four to eight trombones with a rhythms section. The literature also requires the student to improvise. Students are encouraged to write for the ensemble.

MSJ143 Small Jazz Ensemble III
1 credit                             Fall & Spring Semester
Group instruction in the various styles of contemporary jazz. Students will acquire improvisational skills while learning repertoire and performance techniques, and strengthen compositional and arranging skills by contributing original compositions and arrangements to the ensemble's repertoire.

MSJ144 Small Jazz Ensemble IV
1 credit                             Fall & Spring Semester
Group instruction in the various styles of contemporary jazz. Students will acquire improvisational skills while learning repertoire and performance techniques, and strengthen compositional and arranging skills by contributing original compositions and arrangements to the ensemble's repertoire.
MSJ145 Small Jazz Ensemble V
1 credit  Fall & Spring Semester
Group instruction in the various styles of contemporary jazz. Students will acquire improvisational skills while learning repertoire and performance techniques, and strengthen compositional and arranging skills by contributing original compositions and arrangements to the ensemble's repertoire.

MSJ146 Small Jazz Ensemble VI
1 credit  Fall & Spring Semester
Freshmen level group that focuses on the music of Charlie Parker, Dizzy Gillespie, and Thelonious Monk. Issues of modern jazz harmony and rhythm as well as cultivating Bebop vocabulary for improvisation are discussed.

MSJ147 Small Jazz Ensemble VII
1 credit  Fall & Spring Semester
Group instruction in the various styles of contemporary jazz. Students will acquire improvisational skills while learning repertoire and performance techniques, and strengthen compositional and arranging skills by contributing original compositions and arrangements to the ensemble's repertoire.

MSJ150 Studio Jazz Band
1 credit  Fall & Spring Semester
This ensemble performs music in the recent big band tradition, from leaders such as Duke Ellington, Count Basie, Buddy Rich, Bob Brookmeyer, and Thad Jones. The group performs on campus with an emphasis on studio recording.

MSJ151 Concert Jazz Band
1 credit  Fall & Spring Semester
The Concert Jazz Band is the premiere big band at the Frost School of Music. Students are required to perform at an advanced level, and work with a variety of guest artists. Requirements include the ability to sight read difficult material, and to improvise in various styles.

MSJ153 Jazz Band III
1 credit  Fall & Spring Semester
Big Band designed for freshmen and sophomores to gain experience with classic Big Band repertory.

MSJ155 Monk/Mingus Ensemble
1 credit  Fall Semester
This ensemble is dedicated to the study and performance of the music of the influential jazz composers Charles Mingus and Thelonius Monk.

MSJ156 Funk/Fusion Ensemble
1 credit  Fall & Spring Semester
Small jazz ensemble focusing on contemporary electric jazz/rock/fusion/Latin styles. Emphasis is placed on original compositions by the members of the ensemble. The most common instrumentation is bass, drums, piano/synthesizer, guitar, and saxophone.

MSJ157 Horace Silver Ensemble
1 credit  Spring Semester
This ensemble is dedicated to the study and performance of the music of Horace Silver.
MSJ158 Bebop Ensemble
1 credit  Fall & Spring Semester
This is the top instrumental small group and performs frequently both locally and nationally. The ensemble performs exclusively original compositions provided by the members of the group. The styles presented are varied and based on the interests of the participants, but includes bebop, blues, and world music.

MSJ159 Rhythm and Blues Ensemble
1 credit  Fall & Spring Semester
Mid-level ensemble for both instrumentalists and vocalists designed to familiarize students with classic Rhythm and Blues material from the 50's, 60's, and 70s, while preparing for a series of concerts throughout the semester. Students are guided through the process of putting a working band together and preparing it for performances and recordings, including what is expected of and from instruments, vocalists, producers, promoters, and other industry personnel.

MSJ160 Avant Garde Ensemble
1 credit  Fall Semester
This ensemble offers students the opportunity to develop the "free form" improvisation in either the bebop based style of Ornette Coleman or the fusion oriented style as typified by Bill Laswell.

MSJ161 Electric Bass Ensemble
1 credit  Offered By Announcement Only
Ensemble that develops a thorough foundation in basic techniques and bass line creation. The fall semester focuses on the acoustic bass and related styles. The spring semester focuses on the electric bass.

MSJ162 Jazz Saxophone Ensemble
1 credit  Fall & Spring Semester
An intermediate level reading ensemble comprised of five saxophones and rhythm section, designed to reinforce fundamental principles of playing in the typical big band saxophone section. Skills addressed include sight-reading, blend, intonation, phrasing, rhythmic accuracy, etc. Rhythm section players gain reading experience and learn the basics of providing a foundation for big band type arrangements. Repertoire includes both published and selected original charts from student arrangers.

MSJ164 Contemporary Rhythm Section Techniques I
1 credit  Fall Semester
Introduces students to various styles of rhythm section playing--from swing and modern Jazz through Rock, Funk, R&B, and other commercial styles of music. Concepts of sound, groove, balance and blend, repertory, and accompaniment are also discussed.

MSJ165 Contemporary Rhythm Section Techniques II
1 credit  Spring Semester
Fundamentals of rhythm section playing for guitarists, pianists, bassists, and drummers. It covers a variety of contemporary styles within the rock, jazz, Latin, and pop idioms. Students are grouped into ensembles which perform in class weekly.
MSJ166 Small Jazz Ensemble Lab
0 credit Fall & Spring Semester
Performance Lab designed to work in conjunction with all of the 140 level ensembles. Provides and environment in which students are required to perform on a regular rotating schedule throughout the semester. These performances are critiqued by the institution and other faculty, as well as students, in order to nurture a critical but positive atmosphere.

MSJ167 Salsa Ensemble
1 credit Spring Semester
An ensemble of instrumentalists and singers performing a wide variety of Salsa and Latin jazz styles with emphasis on improvisation.

MSJ169 Jazz Guitar Ensemble I
1 credit Fall & Spring Semester
A small instrumental ensemble comprised of five electric guitars which perform with bass and drums in a wide variety of contemporary jazz styles.

MSJ170 Jazz Guitar Ensemble II
1 credit Fall & Spring Semester
A small instrumental ensemble comprised of five electric guitars which perform with bass and drums in a wide variety of contemporary jazz styles.

MSJ171 Jazz Guitar Ensemble III
1 credit Fall & Spring Semester
A small instrumental ensemble comprised of five electric guitars which perform with bass and drums in a wide variety of contemporary jazz styles.

MSJ172 Jazz Guitar Ensemble (Workshop I)
1 credit Fall Semester
A small instrumental reading ensemble, comprised of four to eight electric guitars, which studies a variety of contemporary jazz styles.

MSJ173 Jazz Guitar Ensemble (Workshop II)
1 credit Spring Semester
A small instrumental reading ensemble, comprised of four to eight electric guitars, which studies a variety of contemporary jazz styles.

MSJ195 Jazz Vocal Ensemble I
1 credit Fall & Spring Semester
A choir of 12 to 16 voices, with rhythm section, which perform a wide variety of jazz and pop styles.

MSJ196 Jazz Vocal Ensemble II
1 credit Fall & Spring Semester
A choir of 12 to 16 voices, with rhythm section, which perform a wide variety of jazz and pop styles.

MSJ197 Jazz Vocal Ensemble III
1 credit Fall & Spring Semester
A choir of 12 to 16 voices, with rhythm section, which perform a wide variety of jazz and pop styles.
MSJ203 Jazz Piano Class I
1 credit Fall & Spring Semester
This class covers the rudiments of jazz piano. Students will learn to play basic II V I progressions in major and minor. These progressions will be utilized while learning basic jazz standards.

MSJ204 Jazz Piano Class II
1 credit Fall & Spring Semester
A continuation of MSJ 203, alternate versions of the II V I progression are discussed. Students will also learn to play the "blues" and "rhythm changes" progressions with a walking bass line. Jazz standards will be played as solo melody with choral accompaniment.

MSJ207 Skills Ensemble III
1 credit Fall Semester
Chamber music performance of selected repertoire with a concentration in the music of Miles Davis in the 1950's. Additional repertoire from a list of American standards will also be assigned. Class sessions will cover historical/stylistic performance practice, aural skills (transcription, analysis, sight-reading, etc.) and Jazz arranging for small ensembles.
PREREQUISITE: MSJ 108

MSJ208 Skills Ensemble IV
1 credit Spring Semester
Chamber music performance of selected repertoire from the Hard Bop period (1955-1962) including Blue Note artists. Additional repertoire from a list of American standards will also be assigned. Class sessions will cover historical/stylistic performance practice, aural skills (transcription, analysis, sight-reading, etc.) and Jazz arranging for small ensembles.
PREREQUISITE: MSJ 207 OR PERMISSION OF INSTRUCTOR.

MSJ209 Jazz Guitar Theory I
2 credits Offered By Announcement Only
A study of modern jazz harmony as related to the electric guitar.

MSJ210 Jazz Guitar Theory II
2 credits Offered By Announcement Only
Continuation of MSJ 209.
PREREQUISITE: MSJ 209.

MSJ211 Jazz Vocal Techniques III
1 credit Fall Semester
Course provides performance experience in the Rock/Funk and Rock Ballad idioms that require strong vocal projection and presentation.

MSJ212 Jazz Vocal Techniques IV
1 credit Spring Semester
Advanced techniques for the Jazz/Pop Vocalist in live performance.
PREREQUISITE: MSJ 301 OR PERMISSION OF INSTRUCTOR
MSJ213 Analysis & Evolution of Jazz Styles II.
3 credits  Spring Semester
An overview of the musical styles and genres of the middle and late twentieth century encompassing the evolution of Modern Jazz music including an in-depth study of each period of Modern Jazz and its innovators. Also included is a survey of the major style periods of Rock music from 1945 to the present with prominent artists from each style period.
PREREQUISITE: MSJ 113

MSJ220 Basic Drumset Styles and Techniques (Part 1)
3 credits  Fall Semester
This course explores the basic sticking, swing, backbeat drumset techniques, basic world drumset styles, and chart reading.

MSJ227 Jazz Rhythm Section Techniques
1 credit  Offered By Announcement Only
A jazz ensemble for piano, bass, drums, and horns that offers advanced concepts in small group interactive performance.
PREREQUISITE: MSJ MAJORS

MSJ240 Jazz Skills I
3 credits  Fall Semester
Jazz Skills I covers the fundamentals of Jazz theory and performance. The class is keyboard based. Material includes the basics of melody, harmony and rhythm in the tradition of the Jazz art form. Specific topics include chord construction, chord voicings, progressions, voice leading, rhythmic interpretation and aural recognition.
PREREQUISITE: MTC 141

MSJ241 Jazz Skills II
3 credits  Spring Semester
Jazz Skills II is a continuation of Jazz Skills I. Material includes a more in-depth study of chord/scale theory, polyrhythmic studies, expansion of keyboard skills via increasingly longer or complicated progressions, aural recognition and transcription.
PREREQUISITE: MSJ 240

MSJ305 Jazz Piano Class III
1 credit  Fall & Spring Semester
PREREQUISITE: MSJ 204

MSJ306 Jazz Piano Class IV
1 credit  Fall & Spring Semester
PREREQUISITE: MSJ 305

MSJ307 Skills Ensemble V
1 credit  Fall Semester
Chamber music performance of selected repertoire of the Post Bop era (1960's) with in-depth analysis of the music of John Coltrane, Wayne Shorter, Herbie Hancock, the 1960's Miles David Quintet, and others. Additional repertoire from a list of American standards will also be assigned... Class sessions will cover historical/stylistic performance practice, aural skills (transcription, analysis, sight-reading, etc.) and Jazz arranging for small ensembles.
PREREQUISITE: MSJ 208
MSJ308 Skills Ensemble VI
1 credit    Spring Semester
Chamber music performance of selected repertoire including Avant Garde, Free Jazz and the fusion Movement. Additional repertoire from a list of American standards will also be assigned. Class sessions will cover historical/stylistic performance practice, aural skills (transcription, analysis, sightreading, etc.) and Jazz arranging for small ensembles.
PREREQUISITE: MSJ 307

MSJ320 Basic Drumset Styles and Techniques (Part 2)
3 credits    Spring Semester
This course is a continuation of MSJ 220. It explores advanced sticking, swing, backbeat drumset techniques, advanced world drumset styles, and chart reading.
PREREQUISITE: MSJ 220.

MSJ340 Jazz Skills III
3 credits    Fall Semester
Jazz Skills III continues to build on skills acquired in the previous two semesters. Material includes continued development of keyboard skills and aural recognition through expansion of repertoire, modal and non-dominant/tonic harmonic schemes, bass lines and counterpoint, harmonization of melodies, and re-harmonization of basic progressions and transcription.
PREREQUISITE: MSJ 241

MSJ341 Jazz Skills IV
3 credits    Spring Semester
Jazz Skills IV is the culmination of the four level Jazz Skills sequence. Students are expected to understand and aurally recognize advanced harmonic, melodic, and rhythmic material. New material may include Latin and other straight-eighth rhythms, multi-voice counterpoint, advanced re-harmonization, and improvising at the keyboard. Keyboard skills run concurrent with Jazz Arranging II techniques (MSJ 520).
PREREQUISITE: MSJ 340

MSJ342 Technology Skills III
2 credits    Fall & Spring Semester
Music Technology III is a continuation of MMI 240 Technology Skills I and MMI 241 Technology Skills II. Recording projects combining acoustic instruments with software based instruments in a Digital Audio Workstation. Studio recording techniques including microphone placement will be demonstrated in a lab environment. Projects will be based on student compositions and/or arrangements. Post-production will include mixing, mastering and CD manufacturing.
PREREQUISITE: MMI 241

MSJ371 Jazz Improvisation I
3 credits    Fall & Spring Semester
Fundamentals of jazz harmony with emphasis on simple chord progressions, altered scales, and modes.

MSJ372 Jazz Vocal Improvisation I
3 credits    Spring Semester
Fundamentals of jazz harmony with emphasis on complex harmonic progressions and tunes.
PREREQUISITE: MSJ 371
SCHOOL OF MUSIC
STUDIO MUSIC & JAZZ

MSJ493 Special Projects
1-3 credits  Fall & Spring Semester & First & Second Summer Session
Supervised readings and other activities in specific areas of Studio Music and Jazz.
PREREQUISITE: UNDERGRADUATE MUSIC STUDENTS ONLY. DEAN'S APPROVAL AND SIGNATURE REQUIRED.

MSJ499 Senior Recital
1 credit  Fall & Spring Semester
A public recital of one hour or more. Course is required of all performance majors.

MSJ509 Jazz Composition I
2 credits  Fall Semester
Application of advanced composition techniques to various contemporary Jazz styles making extensive use of analysis of established compositions. Emphasis is placed on small group performance.
PREREQUISITE: MTC 211 OR MTC 240

MSJ510 Jazz Composition II
2 credits  Spring Semester
This course is a continuation of MSJ 500 with an emphasis on melody writing, reharmonization techniques, pentatonic/blues composition, and an introduction to advanced harmonic materials.

MSJ516 Jazz Vocal Arranging
2 credits  Spring Semester
Analysis and techniques of jazz vocal writing.

MSJ519 Advanced Modern Arranging I
3 credits  Fall Semester
Advanced arranging and composition for the Jazz and studio ensemble.

MSJ520 Advanced Modern Arranging II
3 credits  Spring Semester
Advanced arranging and composition for the Jazz and studio ensemble.

MSJ521 Advanced Modern Arranging III
3 credits  Spring Semester
Course addresses scoring for large jazz ensemble, utilizing chord scale voicings and line writing techniques. Emphasis is placed on orchestration styles such as Duke Ellington, Gil Evans, and Thad Jones.

MSJ522 Introduction to Midi Sequencing and Digital Workstations
2 credits  Fall & Spring Semester
An introduction to Midi Sequencing with hands-on experience working with a computer sequencing workstation. Topics include sequencing, quantizing, editing, mixing, and effects processing.
PREREQUISITE: MSJ 519/520

MSJ544 Jazz Pedagogy and Administration
3 credits  Spring Semester
The philosophy, methods, and materials of instruction pertinent to the teaching and management of a jazz and commercial curriculum at the high school and college level. Includes preparation of model curricula and supervised instruction.
PREREQUISITE: MSJ 565
MSJ560 Advanced Jazz Improvisation Theory
3 credits
Fall Semester
Review of fundamentals and introduction of advanced topics in jazz harmony and scale resources for improvisation.
PREREQUISITE: PLACEMENT AUDITION

MSJ565 Advanced Improvisation I
3 credits
Spring Semester
Use of stylistic nuance with emphasis on melodic development, complex harmonies, time-feel, and phrasing. Open only to senior or graduate majors in Studio Music and Jazz.
PREREQUISITE: MSJ 372

MSJ566 Advanced Improvisation II
3 credits
Fall Semester
Refinement of improvisation concepts leading towards the establishment of a personal style of playing. Open only to senior or graduate majors in Studio Music and Jazz.
PREREQUISITE: MSJ 565

MSJ589 Jazz Accompanying
2 credits
Offered By Announcement Only
A comprehensive study in accompaniment concepts for pianists/guitarists reflecting contemporary and traditional jazz styles.

MSJ593 Special Topics MSJ
1- 3 credits
Fall & Spring Semester
Supervised topics and other activities in specific areas of Studio Music and Jazz.
PREREQUISITE: DEAN’S APPROVAL AND SIGNATURE REQUIRED

VOCAL PERFORMANCE

MVPVOA Voice
1- 2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Demonstrate a beginning concept of breath management, legato connection for moderate length phrases, clear articulation and projection of vowels and consonants in English, emotional connection to and communication of text, release of vibrato in sustained singing, and jury repertoire, language, and performance requirements (See Guidelines for Voice Study).
PREREQUISITE: AUDITION FOR LEVEL A; SUCCESSFUL COMPLETION OF LEVEL A TO MOVE TO LEVEL B.

MVPVOB Voice
1- 2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Demonstrate a beginning concept of breath management, legato connection for moderate length phrases, clear articulation and projection of vowels and consonants in English, emotional connection to and communication of text, release of vibrato in sustained singing, and jury repertoire, language, and performance requirements (See Guidelines for Voice Study).
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY
MVPVOC Voice
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Demonstrate consistent breath support, firmly established legato line, evidence of musical phrasing, consistent vibrato, ability to execute technical exercises evenly throughout the range, and jury repertoire, language, and performing (See Guidelines for Voice Study).
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MVPVOD Voice
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Demonstrate consistent breath support, firmly established legato line, evidence of musical phrasing, consistent vibrato, ability to execute technical exercises evenly throughout the range, and jury repertoire, language, and performing (See Guidelines for Voice Study).
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MVPVOE Voice
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Demonstrate evidence of upper range extension with fully supported sound and appropriate modification of resonators, ability to self-prepare a song, knowledge of musical styles and historical periods of music, effective communication of song literature, an established warm-up regimen and technical exercises as prescribed by the voice teacher, and jury repertoire, language, and performance requirements (See Guidelines for Voice Study).
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MVPVOF Voice
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Demonstrate evidence of upper range extension with fully supported sound and appropriate modification of resonators, ability to self-prepare a song, knowledge of musical styles and historical periods of music, effective communication of song literature, an established warm-up regimen and technical exercises as prescribed by the voice teacher, and jury repertoire, language, and performance requirements (See Guidelines for Voice Study).
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MVPVOG Voice
1-2 credits
Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Demonstrate perfect facility in required lyric languages, ability to evaluate performances critically and coherently, facility with register changes in upper range, polished and artistic performing with accuracy in pitch, rhythm, good posture, breath management, phonation, and resonance in addition to jury repertoire, language, and performance requirements (See Guidelines for Voice Study).
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.
MVPVOH Voice
1-2 credits  Fall & Spring Semester
1-hour lesson for students enrolled for 2 credits. 1/2-hour lesson for students enrolled for 1 credit. Technical Requirements: Demonstrate perfect facility in required lyric languages, ability to evaluate performances critically and coherently, facility with register changes in upper range, polished and artistic performing with accuracy in pitch, rhythm, good posture, breath management, phonation, and resonance in addition to jury repertoire, language, and performance requirements (See Guidelines for Voice Study).
PREREQUISITE: SUCCESSFUL COMPLETION OF PREVIOUS LEVEL OF STUDY.

MVP008 Voice Forum
0 credit  Fall & Spring Semester
A weekly informal recital setting and performance class for voice principals and majors with guest artists, master classes, and faculty presentations. Required for all two, three, and four credit applied voice students.

MVP101 Voice Class for Voice Principals
1-2 credits  Fall Semester
Class instruction for beginning voice principals. Fundamentals of singing, breath control, and tone production are taught. Appropriate solo repertoire is assigned.

MVP144 Vocal Techniques for Non-Majors
1 credit  Fall & Spring Semester
Class instruction in fundamentals of singing, breath control, tone production, diction, and solo singing for non-music majors. Basic music reading skills are taught.

MVP147 Men's Chorale
1 credit  Fall & Spring Semester
This ensemble is open to the entire university community. Students will work on all aspects of choral singing, including skills in basic musicianship. This ensemble presents two or three concerts per semester.

MVP148 Women's Chorale
1 credit  Fall & Spring Semester
This ensemble is open to the entire university community. Students will work on all aspects of choral singing, including skills in basic musicianship. This ensemble presents two or three concerts per semester.

MVP167 Music Theatre Workshop
1 credit  Fall & Spring Semester
Participation in a fully-staged production or supervised class work and projects which integrate the skills of the musical theatre singer/actor.

MVP180 Symphonic Choir
1 credit  Fall & Spring Semester
Study and performance of choral literature appropriate for large choir, including choral orchestral masterworks.

MVP181 Choral Conducting I
1 credit  Fall Semester
This course provides practical procedures and materials for beginning conducting students. Students demonstrate basic conducting patterns, preparations, and releases in all meters.
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MVP182 Choral Conducting II
1 credit  Spring Semester
This course provides practical procedures and materials for advanced conducting students. Students demonstrate refined skills in conducting musical style s and independence of gesture. A strong emphasis is placed on conducting of mixed meters.
PREREQUISITE: MVP 181 OR MIP 317.

MVP184 Chamber Singers
1 credit  Fall & Spring Semester
An ensemble of eighteen to twenty undergraduate and graduate students, the ensemble performs challenging chamber choir repertoire from the Renaissance through the Twentieth Century.

MVP185 UM Chorale
1 credit  Fall & Spring Semester
This ensemble performs significant choral literature with an emphasis on music of the Twentieth-Century and on choral/orchestral works including opera. Open to all qualified undergraduate students, regardless of major.

MVP188 Opera Theater I
1 credit  Fall Semester
Typically taken in the first semester of freshman year by vocal performance majors. Basic stage techniques will be studied and mastered. The learning process repertoire, basic acting and performance techniques will be addressed. Methods of communication of text and emotion will be studied and applied. Emphasis will be on solo repertoire with possible participation in fall opera production.

MVP189 Opera Theater II
1 credit  Spring Semester
Typically taken in the second semester of the first year by vocal performance majors. Further research, development and application of stage deportment, character development, acting skills, communication of emotion and text. Repertoire will include solo songs, arias and small ensembles and possible participation in spring opera production.

MVP196 Singing for the Stage I-A
1 credit  Spring Semester
The selection, learning process, and performance of Musical Theatre Songs with emphasis on tone production and style.

MVP197 Singing for the Stage I-B
1 credit  Spring Semester
Continuation of MVP 196.
PREREQUISITE: MVP 196.

MVP205 Acting for Opera
2 credits  Fall Semester
This course is designed to combine acting techniques with singing, dealing specifically with challenges presented to the singing actor and including musical styles and periods, period fashion and props, movement, and stage techniques for recitative, aria and ensemble performance.

MVP206 Acting for Opera - Intermediate
2 credits  Spring Semester
Course designed to continue to develop acting and character development skills for operatic performance.
MVP210 Score Reading for Stage Management Majors
1 credit  Fall Semester
Course designed to teach stage managers to read a piano/vocal score in order to call light and sound cues. Students will study time signatures, rhythms, and tempo indications as well as understand the basic forms of music.
PREREQUISITE: ENROLLMENT IN STAGE MANAGEMENT PROGRAM

MVP250 English Diction for Singers
1 credit  Fall Semester
Class designed for voice majors and principals, focus on development of pronunciation skills for teaching and singing in English. International Phonetic Alphabet is presented as a learning tool.

MVP251 Italian Diction for Singers
1 credit  Spring Semester
Class designed for voice majors and principals, with a focus on the development of pronunciation skills for teaching in Italian and Latin. International Phonetic Alphabet is presented as a learning tool.
PREREQUISITE: MVP 250.

MVP252 German Diction for Singers
1 credit  Fall Semester
Class designed for voice majors and principals, with a focus on the development of pronunciation skills for teaching and singing in German. International Phonetic Alphabet is presented as a learning tool.
PREREQUISITE: MVP 250.

MVP253 French Diction for Singers
1 credit  Spring Semester
Class designed for voice majors and principals, with a focus on the development of pronunciation skills for teaching and singing in French. International Phonetic Alphabet is presented as a learning tool.
PREREQUISITE: MVP 250.

MVP281 Choral Conducting III
1 credit  Fall Semester
This course provides a synthesis of the skills demonstrated in Choral Conducting I and II, while developing error detection skills in musical scores.
PREREQUISITE: MVP 182 OR MIP 418.

MVP282 Choral Conducting IV
1 credit  Spring Semester
This course focuses on quality choral literature for middle school and high school ensembles.
PREREQUISITE: MVP 281 OR MIP 281.

MVP288 Opera Theater III
1 credit  Fall Semester
Taken by vocal performance majors in the first semester sophomore year, this course is designed to combine acting techniques with singing, dealing specifically with challenges unique to the singing actor and including musical styles and periods, period fashion and props, movement, and stage technique for recitative, aria and ensemble performances. Movement will be more specific to stage requirements, but include dance steps and period movement.
MVP289 Opera Theater IV
1 credit  Spring Semester
Typically taken in the 2nd semester, sophomore year by vocal performance majors. Course designed to continue to develop acting and character development skills and apply techniques learned in Opera Theater I, II, and III.

MVP294 Singing for Actors
1 credit  Fall Semester
The preparation of song literature and audition material for actors (can be repeated for credit).

MVP296 Singing for the Stage II-A
1 credit  Spring Semester
Instruction in auditioning methods and materials for American musical theatre.
PREREQUISITE: THA 197.

MVP297 Singing for the Stage II-B
1 credit  Fall Semester
Instruction in preparing vocal material for musical scenes drawn from American musical theatre.
PREREQUISITE: THA 296.

MVP388 Opera Theater V
1 credit  Fall Semester
Typically taken in the first semester, junior year vocal performance majors. Course designed to continue to develop acting and character development skills and apply techniques learned in Opera Theater I, II, III and IV.

MVP389 Opera Theater VI
1 credit  Fall Semester
Typically taken in the 2nd semester, junior year by vocal performance majors. Course designed to continue to develop acting and character development skills and apply techniques learned in Opera Theater I-V.

MVP399 Junior Recital
1 credit  Fall & Spring Semester
A public recital of one half-hour or more. Course required of all Vocal Performance majors.

MVP415 Auditioning I
2 credits  Fall Semester
Students prepare three to five audition pieces, photos, and resumes. Income tax, unions, opportunity, and methods of searching for and obtaining work is included. Course culminates in a seven to ten day trip to New York attending auditions.
PREREQUISITE: SENIOR STANDING IN BACHELOR OF MUSIC, MUSICAL THEATRE DEGREE.

MVP416 Auditioning II
2 credits  Spring Semester
Continuation of MVP 415.
PREREQUISITE: MVP 415.
MVP420 Musical Theatre Studio  
3 credits  
Spring Semester  
Participation in a full production to be directed, choreographed, acted and designed by faculty or students.  
PREREQUISITE: SENIOR MUSICAL THEATRE MAJORS ONLY

MVP431 Musical Theatre Styles I  
3 credits  
Fall Semester  
Course topics include creating a character through song and dialogue, making transition from songs into and out of scenes, and becoming comfortable and familiar with the style and performance unique to musical theatre.

MVP432 Musical Theatre Styles II  
3 credits  
Spring Semester  
Continuation of MVP 431.  
PREREQUISITE: THA 431

MVP488 Opera Theater VII  
1 credit  
Fall Semester  
Typically taken by Vocal Performance majors in the first semester, senior year.  
Course designed to continue to develop acting and character development skills and apply techniques learned in Opera Theater 1-VI.

MVP489 Opera Theater VIII  
1 credit  
Spring Semester  
Typically taken by Vocal Performance majors in the 2nd semester, senior year. course designed to continue to develop acting and character development skills and apply techniques learned in Opera Theater I-VIII.

MVP493 Special Projects  
1- 3 credits  
Fall & Spring Semester & First & Second Summer Session  
Supervised readings and other activities in specific areas of Vocal Performance.  
PREREQUISITE: UNDERGRADUATE MUSIC STUDENTS ONLY. DEAN'S APPROVAL AND SIGNATURE REQUIRED.

MVP499 Senior Recital  
1 credit  
Fall & Spring Semester  
A public recital of one hour or more. Course is required of all performance majors.

MVP508 Choral Score Study  
2 credits  
Fall Semester  
In depth study of selected choral or choral/orchestral works related to literature being performed by university ensembles during the academic year.

MVP538 Vocal Pedagogy  
2- 3 credits  
Fall Semester  
Course covers methods and concepts in the teaching of singing. Emphasis is placed on psychological, physiological, and acoustical principles involved in voice production with practical application, observing and teaching individual and class voice in a supervised environment.  
PREREQUISITE: SENIOR STANDING IN MUSIC
MVP552 Vocal Performance Preparation
1 credit  
Fall & Spring Semester
Musical preparation of a wide range of assigned vocal literature from all periods for performance in forums, juries, and recitals. Special emphasis is on musical values, styles, translations of texts, diction, pronunciation of Italian, German, French, and English, and memorization.

MVP580 Opera Production
1 credit  
Fall & Spring Semester
Opera production for main stage production, scenes, and other productions. Open only to students that are cast in productions, as determined by audition and faculty decision. Typically taken by vocal performance majors.

MVP588 Voice Performance in Salzburg, Austria
2-4 credits  
First & Second Summer Session
Course is conducted at Salzburg College, Austria. Students receive comprehensive and intensive vocal training from University of Miami faculty as well as distinguished guest artists. A class in vocal repertoire is also included.

MVP593 Special Topics MVP
1-3 credits  
Fall & Spring Semester
Supervised topics and other activities in specific areas of Vocal Performance. PREREQUISITE: DEAN'S APPROVAL AND SIGNATURE REQUIRED
HST300 Introduction to Theory and Research
3 credits
Fall Semester
The introduction to the function of theory and research in nursing practice. Emphasis is on the development of an understanding of scientific problem solving using a multicultural perspective.

HST310 Using Research in Clinical Practice
3 credits
Fall Semester
Introduction to basic research skills for individuals interested in health research. Emphasis is on the identification of health problems, reading research articles, and research issues such as research in health, ethics of health, privacy issues and the process of informed consent.

HST312 Health Disparities Practicum
3 credits
Offered By Announcement Only
This course will focus on providing students with the required skills to conduct research projects. Students will be provided with "hands-on" experience on the management team of an El Centro study to gain practical experience in the conduct of clinical trials and basic studies.

HST313 Global Health Disparities
3 credits
Offered By Announcement Only
This course will emphasize the health disparity issues that globally impact on all populations. Content may include health disparity issues associated with gender, infection, prevention, immunizations, child welfare policy (WHO, NAFTA, etc.) WRITING COURSE

HST536 U.S. Health Care Crisis: Politics and Policies
3 credits
Spring Semester
This course will explore key health policy issues within the U.S., along with the politics and interest groups which shape them. Fundamental concerns within the health care system such as: cost, quality and access to care will be analyzed. Major topics of discussion will include: Medicare, Medicaid, private insurance, the nursing shortage, and prescription drugs. The politics and policies surrounding issues such as bioethics, globalization, and infectious disease will also be considered.
PREREQUISITE: JUNIORS AND SENIORS ONLY (JUNIORS MUST HAVE JUNIOR STANDING THE SEMESTER THEY TAKE THE CLASS)

HEALTHCARE SCIENCES
HCS202 Introductory Statistics in Health Care
3 credits
Fall & Spring Semester
Application of descriptive and inferential statistics. Principles and methods of summarizing data including tables, graphs, percentile ranks, central tendency, variability, normal distribution. Basic concepts of probability, hypothesis testing, and analysis of variance. Examples and problems from nursing and health sciences.
PREREQUISITE: MTH 101

HCS205 Personal Nutrition
3 credits
Spring Semester
Principles of nutrition integrated with cultural dietary patterns across the lifespan.

HCS206 Introduction to Public Health
3 credits
Fall & Spring Semester
Introduction to all aspects of public health, including health services administration and health policy.
HCS207 Introduction to Pharmacology
3 credits  Fall Semester
Introduction to the basic principles of therapeutic pharmacology. Special consideration of cultural beliefs and folk medicine included. Emphasis is on the understanding of the different classes of drugs and their application in various health care settings.
PREREQUISITE: BIL 150, CHM 103 OR CHM 111, HCS 212, HCS 215.

HCS208 Introductory Epidemiology
3 credits  Fall & Spring Semester
This course is a general introduction to epidemiology, definition of concepts and natural history of disease and levels of prevention. It also covers measures of morbidity and mortality. Epidemiologic aspects of infectious and chronic diseases.

HCS212 Human Anatomy
3 credits  Fall & Spring Semester
Emphasis is on the understanding of the anatomical compartments of the human body and the ability to identify the bony skeleton, musculatures, blood vessels and internal organs of each compartment.
PREREQUISITE: BIL 150.

HCS213 Human Anatomy Laboratory
1 credit  Fall & Spring Semester
PREREQUISITE: CO-REQUISITE OR PRE-REQUISITE HCS 212

HCS215 Principles of Systemic Physiology
3 credits  Fall & Spring Semester
Emphasis is on the understanding of the Physiology and selected Pathophysiology of various organs and systems.
PREREQUISITE: PRE-REQUISITE OR CO-REQUISITE CHM 111/113 OR CHM 103/105

HCS216 Principles of Systemic Physiology Laboratory
1 credit  Fall & Spring Semester
Laboratory to accompany HCS 215
PREREQUISITE: PRE-REQUISITE OR CO-REQUISITE HCS 215

HCS301 Human Sexuality and Vulnerable Populations
3 credits  Fall & Spring Semester
The study of human sexuality via multidisciplinary theoretical perspectives and research. Students will examine the complex relationships of the physiological, psychological, cultural, gender, religious, historical, and political aspects of human sexuality. Human sexuality in the context of health disparities will form the foundation for the course. WRITING COURSE
PREREQUISITE: HCS 206 OR JUNIOR STANDING IN THE BSN

HCS303 HIV/AIDS and Health Maintenance for Health Care Providers
3 credits  Spring Semester
Definition, diagnosis, management, and care of diverse patient populations with HIV infection and AIDS. Course is presented and discussed from an interdisciplinary health care perspective.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
HCS305 Issues in Health Disparities  
3 credits  
Spring Semester  
This course will be an introduction to the general research on health systems and health disparities. Emphasis will be placed on social, biological, economic and social policy issues that impact on the health of minority populations. Concepts associated with epidemiology, poverty, racism, public policy and international politics will be explored. WRITING COURSE  
PREREQUISITE: HCS 206 OR JUNIOR STANDING IN THE BSN  

HCS306 Principles of nutrition integrated with cultural dietary patterns for client ad  
3 credits  
Fall Semester  
PREREQUISITE: SOPHOMORE STANDING OR PERMISSION OF INSTRUCTOR.  

HCS309 Health and Environment  
3 credits  
Fall & Spring Semester  
This course examines health issues, scientific understanding of causes and possible future approaches to control of the major environmental health problems. Topics include how the body reacts to environmental pollutants; physical, chemical, and biological agents of environmental contamination; vectors for dissemination; susceptible populations; the scientific bases for policy decisions and emerging global environmental health problems.  
PREREQUISITE: HCS 206  

HCS310 Global Health  
3 credits  
Fall & Spring Semester  
PREREQUISITE: HCS 206  

HCS313 Global Health Disparities  
3 credits  
Offered By Announcement Only  
This course will provide an introduction to the health disparity issues that globally impact all populations. The content will be directed toward health systems, world health indicators, policy issues, immigration, health care provider accessibility, research, country development and the role that international organizations play in global health disparities.  
PREREQUISITE: PERMISSION OF INSTRUCTOR  

HCS317 Theories in Growth and Development  
3 credits  
Fall & Spring Semester  
Exploration of growth and development through theories related to its five major components: physiologic, cognitive, psychosocial, moral and spiritual across the lifespan with discussion of developmental theories as they relate to nursing.  
PREREQUISITE: PERMISSION OF INSTRUCTOR  

HCS319 Contemporary Issues in Bioethics for Health Care  
3 credits  
Offered By Announcement Only  
This course will cover bioethical issues in the health care environment, including ethical principles, theories and decision making strategies. WRITING COURSE  
PREREQUISITE: PERMISSION OF INSTRUCTOR
HCS320 Introduction to Health Policy  
3 credits  
Fall & Spring Semester  
This course provides an introduction to the organization, delivery, and financing of health care in the United States. We will consider policy challenges created by the structure of the health care system, including access to care, quality of care, and cost growth. Major areas of focus will include public insurance programs (medicare, Medicaid/CHIP), private insurance, the uninsured, health disparities, and implementation of health care reform legislation.

HCS321 Health Promotion and Disease Prevention  
3 credits  
Fall & Spring Semester  
The focus of this course is on the understanding and implementation of strategies aimed at promoting health and preventing disease. It also focuses on optimal health maintenance and wellness support for individuals, families and communities. The content of the course includes health across the lifespan and resources associated with health promotion. Common health alterations will be discussed, as well as sociocultural perceptions of health and illness.  
PREREQUISITE: HCS 206

HCS408 Nursing Care in the Genomic Era  
3 credits  
Fall Semester  
Exploration of basic knowledge in genomics, understanding of social, cultural and psychological implications of genetic services, health prevention and promotion.

HCS414 Contemporary Health Issues in South Florida  
3 credits  
Fall & Spring Semester  
This course provides students with an in-depth look at public health topics relevant to communities in South Florida. Emphasis will be placed on the social, cultural, and policy issues that impact the health of vulnerable population in our community. Interdisciplinary research/ knowledge and practice from UM and other relevant institutions will be highlighted.  
PREREQUISITE: HCS 206 AND HCS 208

HCS415 Field Experience in Community Health  
3 credits  
Fall & Spring Semester  
This Course provides students with field experience in community health. During the didactic portion of the course, students will be introduced to the basic principles and methods used in community health assessment, program development, program implementation, and evaluation. During the field experience component of the course, students will work under the supervision of lead faculty.  
PREREQUISITE: HCS 206: HCS 208: HCS 309: HCS 310

HCS419 Contemporary Health Issues in South Florida  
3 credits  
Fall & Spring Semester  
PREREQUISITE: HCS 206

HCS487 Global Health Practicum  
3 credits  
Offered By Announcement Only  
Collaborative clinical venture between UM/SON and an International School of Nursing. Students will exchange supervised western clinical experiences, knowledge and skills for the care of clients and families in specialty areas, including MedSurg, Surgery, ICU and/or Emergency nursing units. Students will apply and synthesize basic science knowledge and skills that foster ethical, legal and culture specific health care.  
PREREQUISITE: PERMISSION OF INSTRUCTOR
HCS490 Field Practicum in Community Health
3 credits
Fall & Spring Semester
PREREQUISITE: ALL REQUIRED COURSEWORK FOR BSPH (HCS 206, HCS 208, HCS 309, HCS 310, HCS 321, HST 536, OR OTHER HEALTH POLICY COURSE.)

HCS499 Selected Topics
0-6 credits
Fall & Spring Semester & First Summer Session
PREREQUISITE: PERMISSION OF INSTRUCTOR

NURSING

NUR100 Introduction to Nursing
3 credits
Offered By Announcement Only
This is an introductory course to explore the various roles and responsibilities of the professional nurse in American health care. Major issues within health care today will be discussed and the impact they have on professional nursing will be explored.

NUR200 Summer Scholars Program
3 credits
Second Summer Session
Course focuses on current health care issues and the health care system as well as future directions of health care.
PREREQUISITE: PERMISSION OF INSTRUCTOR

NUR201 Writing as a Learning Strategy
2 credits
First & Second Summer Session
The anxiety and apprehension associated with writing can become a significant deterrent to learning. Through experiential work, students learn the mechanics of scholarly writing as well as using writing as a learning strategy. (2)

NUR202 Introductory Statistics in Health Care
3 credits
Fall & Spring Semester
Application of descriptive and inferential statistics. Principles and methods of summarizing data including tables, graphs, percentile ranks, central tendency, variability, normal distribution. Basic concepts of probability, hypothesis testing, and analysis of variance. Examples and problems from nursing and health sciences.
PREREQUISITE: MTH 101

NUR205 Personal Nutrition
3 credits
Spring Semester
Principles of nutrition integrated with cultural dietary patterns across the lifespan. Not for nursing majors or minors. (3)

NUR207 Introduction to Pharmacology
3 credits
Offered By Announcement Only
Introduction to the basic principles of therapeutic pharmacology. Special consideration of cultural beliefs and folk medicine included. Emphasis is on the understanding of the different classes of drugs and their application in various health care settings.
PREREQUISITE: BIL 150, CHM 103 OR CHM 111, HCS 215
NUR301 Human Sexuality and Vulnerable Populations
3 credits
Fall & Spring Semester
The study of human sexuality via multidisciplinary theoretical perspectives and research. Students will examine the complex relationships of the physiological, psychological, cultural, gender, religious, historical, and political aspects of human sexuality. Human sexuality in the context of health disparities will form the foundation for the course. WRITING COURSE
PREREQUISITE: PERMISSION OF INSTRUCTOR

NUR303 HIV/AIDS and Health Maintenance for Health Care Providers
3 credits
Offered By Announcement Only
Definition, diagnosis, management, and care of diverse patient populations with HIV infection and AIDS. Course is presented and discussed from an interdisciplinary health care perspective. (3)
PREREQUISITE: PERMISSION OF INSTRUCTOR.

NUR304 Adult Health I: Fundamentals of Nursing Practice
0-6 credits
Fall & Spring Semester
This clinical course emphasizes the supervised application of health assessment skills, nursing process, and clinical nursing techniques in the clinical laboratory, community, and acute care settings. (4:2)
PREREQUISITE: JUNIOR LEVEL NURSING STUDENTS

NUR305 Issues in Health Disparities
3 credits
Spring Semester
This course will be an introduction to the general research on health systems and health disparities. Emphasis will be placed on social, biological, economic and social policy issues that impact on the health of minority populations. Concepts associated with epidemiology, poverty, racism, public policy and international politics will be explored. WRITING COURSE
PREREQUISITE: PERMISSION OF INSTRUCTOR

NUR306 Principles of Nutrition
3 credits
Fall Semester
Principles of nutrition integrated with cultural dietary patterns for client adaptation across the lifespan. (2)
PREREQUISITE: SOPHOMORE STANDING OR PERMISSION OF INSTRUCTOR.

NUR307 Pharmacology
3 credits
Fall & Spring Semester & First Summer Session
Introduction to the basic principles of therapeutic pharmacology. Special consideration of cultural beliefs and folk medicine included. (3)
PREREQUISITE: JUNIOR LEVEL NURSING STUDENTS

NUR308 Adult Health II
0-8 credits
Fall & Spring Semester & First Summer Session
This course focuses on the nursing management of the client throughout the adult life cycle who experiences alterations and/or adaptations in physiologic defense mechanisms. Teaching strategies to be utilized include lecture, discussion, critical thinking exercises. (5:2)
PREREQUISITE: JUNIOR LEVEL NURSING STUDENT
NUR310 Global Health
3 credits
Fall & Spring Semester
Introduction to the concepts of global health and the critical links between public
health and social and economic development. Determinants of health and patterns
der of disease and health outcomes across the globe are critically examined. The course
reviews the determinants of health status in terms of biology, demography, epidemiology,
culture, sociology, economics, and politics. Key concerns regarding reproductive
health, child survival, nutrition, communicable diseases, and chronic diseases
are examined. Health care delivery in developed vs. undeveloped regions of the
world are emphasized.

NUR311 Theories and Concepts of Nursing
2 credits
Fall Semester
An introductory nursing course explaining the philosophy of baccalaureate nursing
using the major concepts of person, environment, health, and nursing with a multicultural
focus. Writing Credit. (2)
PREREQUISITE: JUNIOR LEVEL NURSING STUDENT

NUR312 Health Disparities Practicum
3 credits
Offered By Announcement Only
This course will focus on providing students with the required skills to conduct
research projects. Students will be provided with "hands-on" experience on the
management team of an El Centro study to gain practical experience in the conduct
of clinical trials and basic studies.

NUR313 Global Health Disparities
3 credits
Offered By Announcement Only
This course will emphasize the health disparity issues that globally impact on
all populations. Content may include health disparity issues associated with gender,
Infection, prevention, immunizations, child welfare policy (WHO, NAFTA etc.) WRITING
COURSE
PREREQUISITE: PERMISSION OF INSTRUCTOR

NUR314 Health Assessment
0-4 credits
Fall & Spring Semester & First Summer Session
Introduction to health assessment using a lifespan approach. Emphasis is on the
development of data collection and basic decision-making using health assessment
findings.
PREREQUISITE: JUNIOR LEVEL NURSING STUDENT

NUR315 Pathophysiology
3 credits
Fall & Spring Semester & First Summer Session
The study of the physiologic and biologic manifestations of disease and disease
processes. Emphasis is placed on physiology of altered health within the context
of disruptions of structure and function of the human body as a whole. (3)
PREREQUISITE: JUNIOR LEVEL NURSING STUDENT

NUR317 Theories in Growth and Development
3 credits
Fall & Spring Semester
Application of growth and development theories through the lifespan with a case
study approach to issues commonly encountered nursing practice in a variety of
clinical settings. (2)
PREREQUISITE: PERMISSION OF INSTRUCTOR
NUR318 Maternal Health Nursing.  
0-4 credits  Fall & Spring Semester & First Summer Session  
This course focuses on the nursing process in the care of pediatric clients and families, the obstetrical client and woman's health. Emphasis is on the use of the nursing process to assist clients to adapt to health alterations requiring care in secondary health care settings.  
PREREQUISITE: JUNIOR LEVEL NURSING STUDENT  

NUR319 Contemporary Issues in Bioethics for Health Care  
3 credits  Offered By Announcement Only  
This course will cover bioethical issues in the health care environment, including ethical principles, theories and decision making strategies. WRITING COURSE  
PREREQUISITE: PERMISSION OF INSTRUCTOR  

NUR320 Pediatric Health Nursing.  
0-4 credits  Fall & Spring Semester & First Summer Session  
This course focuses in the use of the nursing process to develop and implement nursing management strategies for children and their families experiencing acute, chronic, and critical multi-system health alterations within a multicultural content. Use of the nursing process to expand and develop appropriate clinical interventions and a member of the health care team. Students will build on foundational skills in critical thinking, collaboration, and leadership in the provision of nursing care.  
PREREQUISITE: JUNIOR LEVEL NURSING STUDENT  

NUR350 Career Pathway: Assessment and Development  
3 credits  Offered By Announcement Only  
This nursing course focuses on the assessment and development of a career pathway for RNs seeking a BSN for professional nursing practice. Students will assess their personal and professional assets and the need to further develop their career in nursing. There will be a focus on concepts of professionalism, rules in nursing, nursing education diversity and cultural influences in a dynamic health care environment.  
PREREQUISITE: RN/BSN STUDENTS  

NUR390 Advanced Placement Practice I for RN/BSN Students  
10 credits  Offered By Announcement Only  
Nursing Management of the client throughout adulthood who experiences alterations and/or adaptations/maladaptions in physiologic defense mechanisms; complex alteration and/or adaptations in organ system function. The client in this course is identified as the individual, family or significant others. Course content emphasizes concepts of infection, the surgical client, immunity and altered cell growth, utilizing the nursing theories and the nursing process. Assists adult clients to adjust to multisystem alterations/adaptations/maladaptions in the endocrine, cardiovascular, respiratory, immunological and hemopoietic, nervous, musculoskeletal, digestive, and renal urinary systems. Specific models are utilized to enhance the teaching of critical thinking. Research findings are utilized to support nursing interventions.  
PREREQUISITE: COMPLETION OF RN/BSN COURSE REQUIREMENTS
NUR400 Theories, Research and Evidence-Based Practice
3 credits  Fall & Spring Semester
Course emphasis is placed on developing an understanding of the research process and application of research findings in community-based practice in multicultural settings. Course focuses on the relationship between theory, research, practice, and the development of competencies to become an informed consumer of research. Writing Credit. (2)
PREREQUISITE: SENIOR LEVEL NURSING STUDENTS

NUR401 Evidence-Based Nursing Practice.
3 credits  Fall Semester & First Summer Session
This course examines evidence-based practice in nursing. Focuses on the research process; location, critical appraisal, and evaluation of evidence; application and evaluation of evidence-based practice changes; and quality improvement.
PREREQUISITE: SENIOR LEVEL NURSING STUDENTS

NUR403 Advanced Placement Practice II for RN/BSN Students
10 credits  Offered By Announcement Only
This course focuses on the nursing process in the care of pediatric clients and families, the obstetrical client, and women's health. Emphasis is on the use of the nursing process to assist clients to adapt to health alterations requiring care in secondary health care settings. This course covers care of the pediatric client and the childbearing client and women's health.
PREREQUISITE: COMPLETION OF RN/BSN COURSE REQUIREMENTS

NUR405 Professional Development
3 credits  Offered By Announcement Only
This nursing course focuses on enhancement of the nursing career beyond the entry to practice. It explores the opportunities with graduate nursing education, advanced practice careers, and a critical analysis of legal, ethical, and political dimensions of nursing and advanced practice. Collaborative practice and the changing client populations are also a focus for examination.
PREREQUISITE: NUR 350

NUR408 Genetics and Healthcare
3 credits  Offered By Announcement Only
Exploration of basic knowledge in genomics, understanding of social, cultural and psychological implications of genetic services, health prevention and promotion.
(3)
PREREQUISITE: PERMISSION OF INSTRUCTOR

NUR411 Adult Health III
0- 5 credits  Fall & Spring Semester
This course focuses on the adult experiencing complex multisystem alteration/adaptations in organ and system function. Emphasis is on the use of the nursing process to assist adult clients to adapt to system related insults. (5:2)
PREREQUISITE: SENIOR LEVEL NURSING STUDENTS
NUR414 Advanced Placement Practice III for RN/BSN students
10 credits Offered By Announcement Only
Content emphasizes concepts and themes of families and communities and the use of the nursing process to assist in promoting and maintaining health. The behavioral health focuses on psychotherapeutic processes across the life span. Emphasis is on planning nursing care for individuals, families, and groups and professional and therapeutic communication skills and techniques. Explores the influence of neuro-physiology and psychopharmacology on the development of psychiatric and mental health services and the evolution of the role of the psychiatric nurse.
PREREQUISITE: COMPLETION OF RN/BSN COURSE REQUIREMENTS

NUR415 Perianesthesia Nursing
3 credits First & Second Summer Session
The focus of this course is on the use of the nursing process to develop and implement nursing management strategies for patients and families undergoing a surgical and/or special procedure. Emphasis is placed on the use of a multicultural nursing perspective to plan and implement nursing interventions. This course highlights Perianesthesia nursing care of surgical patients. (2:3)
PREREQUISITE: SENIOR STANDING

NUR426 Leadership & Management in Nursing
6 credits Offered By Announcement Only
Analysis and synthesis of the application of professional concepts in a variety of multicultural health care delivery systems. Emphasis is placed on personal, professional, and organizational growth. Individualized and integrated clinical experiences are provided through direct clinical supervision by preceptors.
PREREQUISITE: FINAL SEMESTER OF RNBSN PROGRAM

NUR430 Leadership In Nursing
3 credits Fall & Spring Semester
Course focuses on the use of the nursing process to develop and implement nursing management strategies for children and their families experiencing acute, chronic, and critical multisystem health alterations within a multicultural context. The use of the nursing process to expand and develop appropriate clinical interventions as a member of the health care team is emphasized. Students build on foundational skills in critical thinking, collaboration, and leadership in the provision of nursing care. (3:9)
PREREQUISITE: NUR 304; NUR 307; NUR 314; NUR 315. CO-REQUISITE: NUR 308

NUR440 Population Focused Nursing
0-4 credits Fall & Spring Semester
The focus is on population-focused nursing and community-oriented approaches to understanding and addressing major public health concerns across the life span. Emphasis is on assessing, planning, implementing and evaluating programs for a variety of communities both domestically and internationally. Health and disease is conceptualized as a complex interaction between individual, relationship, community and socio-economic-politic level factors. Epidemiology, sociology, behavioral sciences and nursing theory and practice are integrated throughout. Special attention is given to addressing the unique needs of vulnerable populations and cultural groups, the elimination of health disparities, and social justice.
PREREQUISITE: SENIOR LEVEL NURSING STUDENTS
NUR448 Psychiatric Mental Health Nursing.  
0-4 credits  
Fall & Spring Semester  
The focus is on psychotherapeutic processes across the life span. Emphasis is on planning nursing care for individuals, families, and communities with a variety of psychiatric and mental health problems in various settings (inpatient, outpatient, community). Professional and therapeutic communication skills and techniques are important components of this course. In addition, this course will explore the influence of genetics, neurophysiology and psychopharmacology on the development of psychiatric and mental health services and the evolution of the role of the psychiatric nurse. Emphasis is on the development of inter-personal and interdisciplinary collaborative skills as a means of assisting persons, families and groups in active problem solving in community based settings. The formulation of nursing diagnoses and management strategies in multicultural settings is a focus. Socio-political environmental aspects of nursing management are integrated throughout.  
PREREQUISITE: SENIOR LEVEL NURSING STUDENTS

NUR450 Role Transition  
8 credits  
Fall & Spring Semester  
Theoretical and applied concepts of transition to the nursing role within the health care setting are explored in this course. The focus is on practice issues and responsibilities in contemporary professional nursing practice. Emphasis is placed on the transition to practice and nursing care systems with increasing responsibility through discussion of practice theory and styles, empowering, mentoring, managing change and striving for excellence. Seminar discussion topics will focus on the issues of successful transition to the practice environment as new nurse.  
PREREQUISITE: SENIOR LEVEL NURSING STUDENTS

NUR453 Role Transition  
5 credits  
Fall & Spring Semester  
Interactions of children, caretakers, and the environment which influence development in the first three years of life. Observation of the child's response to the environment and caretaker's role. Specific interventions/teaching strategies will be formulated and methods to enhance communication with parents and other caregivers will be presented. Prerequisite: Upper division standing or consent of faculty.  

NUR487 Global Health Practicum  
3 credits  
Offered By Announcement Only  
Collaborative clinical venture between the University of Miami, School of Nursing and an International School of Nursing. Students will exchange supervised western clinical experiences, knowledge and skills for the care of clients and families in specialty areas including Medical-Surgical, Surgery, Intensive Care and/or Emergency nursing units. This course will allow students to apply and synthesize basic science knowledge and skills that foster ethical, legal and culture specific health care. (3)  
PREREQUISITE: PERMISSION OF THE INSTRUCTOR

NUR497 Selected Topics  
0-6 credits  
Fall & Spring Semester & First Summer Session  
PREREQUISITE: PERMISSION OF INSTRUCTOR.
NUR498 Selected Topics  
0-6 credits  
Fall & Spring Semester & First Summer Session  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

NUR499 Selected Topics  
0-6 credits  
Fall & Spring Semester & First Summer Session  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

NUR502 Nursing in the International Context  
2-3 credits  
Offered By Announcement Only  
The concept and process of international nursing in the context of world health are discussed. Analysis of the role of nursing in relation to various national health care systems, theories of national development and global strategies for international health are also included. Emphasis is placed on nursing education and service in various nations with a focus on less developed countries. (2-3)

NUR507 Clinical Nutrition in Nursing Practice  
2 credits  
Spring Semester  
Application of clinical nutrition in the assessment, diagnosis, planning, implementation, and evaluation of nursing care of multicultural clients in primary and secondary care settings. (2)  
PREREQUISITE: NUR 306, JUNIOR LEVEL STATUS.

NUR536 U.S. Health Care Crisis: Politics and Policies  
3 credits  
Spring Semester  
This course will explore key health policy issues within the U.S., along with the politics and interest groups which shape them. Fundamental concerns within the health care system such as: cost, quality and access to care will be analyzed. Major topics of discussion will include: Medicare, Medicaid, private insurance, the nursing shortage, and prescription drugs. The politics and policies surrounding issues such as bioethics, globalization, and infectious disease will also be considered.  
PREREQUISITE: JUNIORS AND SENIORS ONLY (JUNIORS MUST HAVE JUNIOR STANDING THE SEMESTER THEY TAKE THE CLASS.)

NUR551 Teaching and Learning Theory in Clinical Nursing Education  
3 credits  
Fall & Spring Semester  
The focus of this course is the exploration of principles and practice of teaching and learning integral to clinical nursing education. Identification of the role of the faculty in teaching students with diverse learning styles and needs within a variety of clinical settings.  
PREREQUISITE: EDUCATION CERTIFICATE STUDENTS. ADMISSIONS TO PROGRAM

NUR553 Methods for Clinical Nursing Education  
3 credits  
Fall & Spring Semester  
The focus of this course is the organization and management of instruction for clinical nursing education. Emphasis is on effective strategies for development of learning opportunities in diverse clinical settings.  
PREREQUISITE: NUR 551, RN; PERMISSION OF INSTRUCTOR

NUR555 Evaluation in Clinical Nursing Education  
1-3 credits  
Fall & Spring Semester  
The focus of this course is the exploration of principles and practices of evaluation integral to clinical nursing education.  
PREREQUISITE: NUR 551, 553 AND/OR PERMISSION OF INSTRUCTOR.
NUR558 Practicum in Clinical Nursing Education  
1- 5 credits  
Fall & Spring Semester  
The focus of this course is laboratory and clinical application of principles of teaching and learning. Emphasis is on the operationalization of the clinical faculty role.  
PREREQUISITE: NUR 551, 553, 555, AND/OR PERMISSION OF INSTRUCTOR.

NUR594 Selected Topics  
0- 3 credits  
Offered By Announcement Only  
Sub-titles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title “Selected Topics”. Also open to continuing education students. (2-3)  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

NUR595 Selected Topics  
2- 3 credits  
Offered By Announcement Only  
Sub-titles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title “Selected Topics”. Also open to continuing education students. (2-3)  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

NUR596 Selected Topics  
2- 3 credits  
Offered By Announcement Only  
Sub-titles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title “Selected Topics”. Also open to continuing education students. (2-3)  
PREREQUISITE: PERMISSION OF INSTRUCTOR.
HONORS AND SPECIAL PROGRAMS
FRESHMAN SEMINARS IN ARTS

FFA190 Freshman Seminars in Arts
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to the Fine Arts. Topics will vary from year to year, as will faculty teaching the seminars.

FFA191 Freshman Seminars in Arts
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to the Fine Arts. Topics will vary from year to year, as will faculty teaching the seminars.

FFA192 Freshman Seminars in Arts
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to the Fine Arts. Topics will vary from year to year, as will faculty teaching the seminars.

FFA193 Freshman Seminars in Arts
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to the Fine Arts. Topics will vary from year to year, as will faculty teaching the seminars.

FFA194 Freshman Seminars in Arts
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to the Fine Arts. Topics will vary from year to year, as will faculty teaching the seminars.

FFA195 Freshman Seminars in Arts
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to the Fine Arts. Topics will vary from year to year, as will faculty teaching the seminars.

FFA196 Freshman Seminars in Arts
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to the Fine Arts. Topics will vary from year to year, as will faculty teaching the seminars.

FRESHMAN SEMINARS IN LITERATURE

FLT190 Freshman Seminars in Literature
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to Literature. Topics will vary from year to year, as will faculty teaching the seminars.

FLT191 Freshman Seminars in Literature
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to Literature. Topics will vary from year to year, as will faculty teaching the seminars.

FLT192 Freshman Seminars in Literature
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to Literature. Topics will vary from year to year, as will faculty teaching the seminars.

FLT193 Freshman Seminars in Literature
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to Literature. Topics will vary from year to year, as will faculty teaching the seminars.
HONORS AND SPECIAL PROGRAMS

FRESHMAN SEMINARS IN LITERATURE

FLT194 Freshman Seminars in Literature
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to Literature. Topics will vary from year to year, as will faculty teaching the seminars.

FLT196 Freshman Seminars in Literature
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to Literature. Topics will vary from year to year, as will faculty teaching the seminars.

FLT199 Freshman Seminars in Literature
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to Literature. Topics will vary from year to year, as will faculty teaching the seminars.

FRESHMAN SEMINARS IN NATURAL SCIENCE

FNS190 Freshman Seminars in Natural Science
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to the Natural Sciences. Topics will vary from year to year, as will faculty teaching the seminars.

FNS191 Freshman Seminars in Natural Science
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to the Natural Sciences. Topics will vary from year to year, as will faculty teaching the seminars.

FNS192 Freshman Seminars in Natural Science
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to the Natural Sciences. Topics will vary from year to year, as will faculty teaching the seminars.

FNS193 Freshman Seminars in Natural Science
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to the Natural Sciences. Topics will vary from year to year, as will faculty teaching the seminars.

FNS194 Freshman Seminars in Natural Science
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to the Natural Sciences. Topics will vary from year to year, as will faculty teaching the seminars.

FNS195 Freshman Seminars in Natural Science
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to the Natural Sciences. Topics will vary from year to year, as will faculty teaching the seminars.

FNS196 Freshman Seminars in Natural Science
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to the Natural Sciences. Topics will vary from year to year, as will faculty teaching the seminars.

FNS197 Freshman Seminars in Natural Science
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to the Natural Sciences. Topics will vary from year to year, as will faculty teaching the seminars.
HONORS AND SPECIAL PROGRAMS
FRESHMAN SEMINARS IN NATURAL SCIENCE

FNS198 Freshman Seminars in Natural Science
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to the Natural Sciences. Topics will vary from year to year, as will faculty teaching the seminars.

FNS199 Freshman Seminars in Natural Science
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to the Natural Sciences. Topics will vary from year to year, as will faculty teaching the seminars.

FRESHMAN SEMINARS IN PHILOSOPHY/RELIGION

FPR190 Freshman Seminars in Philosophy/Religion
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to Philosophy and/or Religion. Topics will vary from year to year, as will faculty teaching the seminars.

FPR191 Freshman Seminars in Philosophy/Religion
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to Philosophy and/or Religion. Topics will vary from year to year, as will faculty teaching the seminars.

FPR192 Freshman Seminars in Philosophy/Religion
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to Philosophy and/or Religion. Topics will vary from year to year, as will faculty teaching the seminars.

FPR193 Freshman Seminars in Philosophy/Religion
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to Philosophy and/or Religion. Topics will vary from year to year, as will faculty teaching the seminars.

FPR194 Freshman Seminars in Philosophy/Religion
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to Philosophy and/or Religion. Topics will vary from year to year, as will faculty teaching the seminars.

FPR195 Freshman Seminars in Philosophy/Religion
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to Philosophy and/or Religion. Topics will vary from year to year, as will faculty teaching the seminars.

FPR196 Freshman Seminars in Philosophy/Religion
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to Philosophy and/or Religion. Topics will vary from year to year, as will faculty teaching the seminars.

FPR198 Freshman Seminars in Philosophy/Religion
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to Philosophy and/or Religion. Topics will vary from year to year, as will faculty teaching the seminars.

FPR199 Freshman Seminars in Philosophy/Religion
3 credits Fall Semester
Seminars designed to introduce up to 25 freshmen to Philosophy and/or Religion. Topics will vary from year to year, as will faculty teaching the seminars.
FSS190 Freshman Seminars in Social Sciences
3 credits  Fall Semester
Seminars designed to introduce up to 25 freshmen to the Social Sciences. Topics will vary from year to year, as will faculty teaching the seminars.

FSS191 Freshman Seminars in Social Sciences
3 credits  Fall Semester
Seminars designed to introduce up to 25 freshmen to the Social Sciences. Topics will vary from year to year, as will faculty teaching the seminars.

FSS192 Freshman Seminars in Social Sciences
3 credits  Fall Semester
Seminars designed to introduce up to 25 freshmen to the Social Sciences. Topics will vary from year to year, as will faculty teaching the seminars.

FSS193 Freshman Seminars in Social Sciences
3 credits  Fall Semester
Seminars designed to introduce up to 25 freshmen to the Social Sciences. Topics will vary from year to year, as will faculty teaching the seminars.

FSS195 Freshman Seminars in Social Sciences
3 credits  Fall Semester
Seminars designed to introduce up to 25 freshmen to the Social Sciences. Topics will vary from year to year, as will faculty teaching the seminars.

FSS197 Freshman Seminars in Social Sciences
3 credits  Fall Semester
Seminars designed to introduce up to 25 freshmen to the Social Sciences. Topics will vary from year to year, as will faculty teaching the seminars.

FSS198 Freshman Seminars in Social Sciences
3 credits  Fall Semester
Seminars designed to introduce up to 25 freshmen to the Social Sciences. Topics will vary from year to year, as will faculty teaching the seminars.

FSS199 Freshman Seminars in Social Sciences
3 credits  Fall Semester
Seminars designed to introduce up to 25 freshmen to the Social Sciences. Topics will vary from year to year, as will faculty teaching the seminars.

HONORS PROGRAM
HON205 Society and the Future
3 credits  Fall Semester
Examination through contemporary readings of future studies and related social changes.
PREREQUISITE: ADMISSION TO THE HONORS PROGRAM; SOPHOMORE STANDING.

HON323 Topics in Humanities
1-3 credits  Fall Semester
PREREQUISITE: ADMISSION TO HONORS PROGRAM.

HON333 Topics in Social Science
1-3 credits  Fall Semester
PREREQUISITE: ADMISSION TO HONORS PROGRAM.
HONORS PROGRAM

HON351 Topics in the Natural Sciences
1-3 credits
Fall Semester

RESEARCH TRAINING

RST401 Responsible Conduct of Research
0 credits
Fall & Spring Semester

RST402 Responsible Conduct of Research
0 credits
Fall & Spring Semester

RST501 Responsible Conduct of Research
0 credits
Fall & Spring Semester
Online research ethics training via CITI Program Responsible Conduct of Research course.

RST502 Responsible Conduct of Research
0 credits
Fall & Spring Semester
Research ethics training via Ethics Programs Responsible Conduct of Research classroom course.

UNIVERSITY OF MIAMI EXPERIENCE

UMX100 The Ultimate University Experience
1 credit
Fall Semester
The Ultimate University Experience (UMX 100) is a comprehensive course specifically designed to assist the first year student in making a successful transition to the University of Miami. The course creates opportunities for students to become self-managed, knowledgeable of others, and an integral part of the community.

UMX101 University Experience - General
1 credit
Fall Semester
This course is designed to promote a positive transition to UM; to give students the information they will need to maximize their UM experience; to foster community building and networking.

UMX102 University of Miami Experience - Athletes
1 credit
Fall Semester
This course is designed to facilitate student-athletes in the development and enhancement of academic and life skills for success in the University setting and beyond. Students will learn how to utilize existing campus resources to achieve their academic and personal goals.

UMX104 University of Miami Experience - Psychology and Neurobiology Majors
1 credit
Fall Semester
This course is designed to ease the transition to college life, give freshman the information they will need to maximize their undergraduate experience, and foster community building and networking within the department.

UMX105 University of Miami Experience - International Students
1 credit
Fall Semester
To promote a positive adjustment to University life; to promote and facilitate a positive UM experience; to foster community building and networking; to provide information about campus resources and how to use them to achieve success at UM and beyond, with a particular emphasis on the needs of an international student.
UMX106 University of Miami Experience - Nursing/Health Science Majors
1 credit Fall Semester
To promote a positive adjustment to University life; to promote and facilitate a positive UM experience; to foster community building and networking; to provide information about campus resources and how to use them to achieve success at UM and beyond, with a particular emphasis on the needs of a nursing/health science major.

UMX107 University of Miami Experience - Education Majors
1 credit Fall Semester
To promote a positive adjustment to University life; to promote and facilitate a positive UM experience; to foster community building and networking; to provide information about campus resources and how to use them to achieve success at UM and beyond, with a particular emphasis on the needs of an education major.

UMX109 University of Miami Experience - Sports and Wellness
1 credit Fall Semester
To promote a positive adjustment to University life; to promote and facilitate a positive UM experience; to foster community building and networking; to provide information about campus resources and how to use them to achieve success at UM and beyond, with a particular emphasis on sports and wellness.

UMX110 University Experience - Undecided Arts and Sciences
1 credit Fall Semester
This course is designed to maximize the student's potential to achieve academic success, to adjust responsibly to the individual and interpersonal challenges of life at UM, and foster community building and networking within the University.

UMX111 University of Miami Experience - Business Majors
1 credit Fall Semester
To promote a positive adjustment to University life; to promote and facilitate a positive UM experience; to foster community building and networking; to provide information about campus resources and how to use them to achieve success at UM and beyond, with a particular emphasis on business majors.

UMX112 University of Miami Experience - Business Majors, Pre-Law/Pre-MBA
1 credit Fall Semester
To promote a positive adjustment to University life; to promote and facilitate a positive UM experience; to foster community building and networking; to provide information about campus resources and how to use them to achieve success at UM and beyond, with a particular emphasis on business majors who want to pursue law school or an MBA.
UMI105 University Internship Part-time
0-1 credits Fall & Spring Semester & First & Second Summer Session
A part-time zero credit internship (minimum of 320 hours) designed to provide opportunities for career exploration, skill development, and exposure to career field. Completion of at least one semester of coursework at UM is required.
PREREQUISITE: COMPLETION OF AT LEAST ONE SEMESTER OF COURSEWORK AT UM

UMI110 University Internship Full-time
0-1 credits Fall & Spring Semester & First & Second Summer Session
A full-time zero credit internship (minimum of 160 hours) designed to provide opportunities for career exploration, skill development, and exposure to career field. Completion of at least one semester of coursework at UM is required.
PREREQUISITE: COMPLETION OF AT LEAST ONE SEMESTER OF COURSEWORK AT UM

UMI205 University Internship Part-time
0-1 credits Fall & Spring Semester & First & Second Summer Session
A part-time zero credit internship (minimum of 320 hours) designed to provide opportunities for career exploration, skill development, and exposure to career field. Completion of at least one semester of coursework at UM is required.
PREREQUISITE: COMPLETION OF AT LEAST ONE SEMESTER OF COURSEWORK AT UM

UMI210 University Internship Full-time
0-1 credits Fall & Spring Semester & First & Second Summer Session
A full-time zero credit internship (minimum of 160 hours) designed to provide opportunities for career exploration, skill development, and exposure to career field. Completion of at least one semester of coursework at UM is required.
PREREQUISITE: COMPLETION OF AT LEAST ONE SEMESTER OF COURSEWORK AT UM

UMI305 University Internship Part-time
0-1 credits Fall & Spring Semester & First & Second Summer Session
A part-time zero credit internship (minimum of 320 hours) designed to provide opportunities for career exploration, skill development, and exposure to career field. Completion of at least one semester of coursework at UM is required.
PREREQUISITE: COMPLETION OF AT LEAST ONE SEMESTER OF COURSEWORK AT UM

UMI310 University Internship Full-time
0-1 credits Fall & Spring Semester & First & Second Summer Session
A full-time zero credit internship (minimum of 160 hours) designed to provide opportunities for career exploration, skill development, and exposure to career field. Completion of at least one semester of coursework at UM is required.
PREREQUISITE: COMPLETION OF AT LEAST ONE SEMESTER OF COURSEWORK AT UM

UMI405 University Internship Part-time
0-1 credits Fall & Spring Semester & First & Second Summer Session
A part-time zero credit internship (minimum of 320 hours) designed to provide opportunities for career exploration, skill development, and exposure to career field. Completion of at least one semester of coursework at UM is required.
PREREQUISITE: COMPLETION OF AT LEAST ONE SEMESTER OF COURSEWORK AT UM

UMI410 University Internship Full-time
0-1 credits Fall & Spring Semester & First & Second Summer Session
A full-time zero credit internship (minimum of 160 hours) designed to provide opportunities for career exploration, skill development, and exposure to career field. Completion of at least one semester of coursework at UM is required.
PREREQUISITE: COMPLETION OF AT LEAST ONE SEMESTER OF COURSEWORK AT UM
SAP101 International Education and Exchange Programs
1-18 credits  Fall & Spring Semester & First & Second Summer Session

SAP102 International Education and Exchange Programs
1-18 credits  Fall & Spring Semester & First & Second Summer Session

SAP103 International Education and Exchange Programs
1-18 credits  Fall & Spring Semester & First & Second Summer Session

SAP104 International Education and Exchange Programs
1-18 credits  Fall & Spring Semester & First & Second Summer Session

SAP201 International Education and Exchange Programs
1-18 credits  Fall & Spring Semester & First & Second Summer Session

SAP202 International Education and Exchange Programs
1-18 credits  Fall & Spring Semester & First & Second Summer Session

SAP203 International Education and Exchange Programs
1-18 credits  Fall & Spring Semester & First & Second Summer Session

SAP204 International Education and Exchange Programs
1-18 credits  Fall & Spring Semester & First & Second Summer Session

SAP300 Israel: History, Culture and Society (Faculty-led study trips)
3 credits  Spring Semester

SAP301 Men and Material Culture in the Ancient Galilee
3 credits  Spring Semester
Course content may vary from semester to semester at selected universities.

SAP302 Genetics
3 credits  Spring Semester
Course content may vary from semester to semester at selected universities.

SAP303 The Rise of Christianity and Rabbinic Judaism in the Galilee
3 credits  Spring Semester
Course content may vary from semester to semester at selected universities.

SAP304 Galilee "Mosaic" - Aspects of the Galilee
3 credits  Spring Semester
Course content may vary from semester to semester at selected universities.

SAP305 Jewish Thought Over the Ages
3 credits  Spring Semester
Course content may vary from semester to semester at selected universities.

SAP306 Independent Study - Galilee Semester
3 credits  Spring Semester
Course content may vary from semester to semester at selected universities.

SAP307 Elementary Hebrew I
3 credits  Spring Semester
SAP308 Cell and Molecular Biology
3 credits
Spring Semester
Course content may vary from semester to semester at selected universities.

SAP309 The Middle East and the Media
3 credits
Spring Semester
Course content may vary from semester to semester at selected universities.

SAP310 Decision Making and Conflict Resolution in the Middle East
3 credits
Spring Semester
Course content may vary from semester to semester at selected universities.

SAP311 Study Abroad-Argentina-Universidad del Salvador
1-18 credits
Fall & Spring Semester & First & Second Summer Session

SAP312 Study Abroad - Argentina - Universidad de San Andres
1-18 credits
Fall & Spring Semester

SAP313 Study Abroad - Argentina - Universidad Torcuato di Tella
1-18 credits
Fall & Spring Semester

SAP314 Czech Culture and Language
0- 3 credits
Fall & Spring Semester

SAP315 Study Abroad - Trinidad - University of the West Indies
1-18 credits
Fall & Spring Semester & First & Second Summer Session

SAP316 Study Abroad - Dominican Republic - Pont. Univ. Catolica Madre & Maestra
1-18 credits
Fall & Spring Semester

SAP317 Classroom Prague
3 credits
Spring Semester
Course content may vary from semester to semester at selected universities.

SAP318 UPrague Elective A
3 credits
Spring Semester
Course content may vary from semester to semester at selected universities.

SAP319 Czech and European Art and Architecture
3 credits
Fall & Spring Semester
Course content may vary from semester to semester at selected universities.

SAP320 UPrague Elective B
3 credits
Spring Semester
Course content may vary from semester to semester at selected universities.

SAP321 Study Abroad-Australia-James Cook University
1-18 credits
Fall & Spring Semester

SAP322 Study Abroad-Australia-University of Wollongong
1-18 credits
Fall & Spring Semester

SAP323 Study Abroad-Australia-Monash University
1-18 credits
Fall & Spring Semester
SAP324 Study Abroad - Australia - University of Technology, Sydney
1-18 credits
Fall & Spring Semester

SAP325 Study Abroad - Australia - Murdoch University
1-18 credits
Fall & Spring Semester

SAP326 Study Abroad - Australia - Edith Cowan University
1-18 credits
Fall & Spring Semester

SAP328 Study Abroad - Australia - Griffith University
1-18 credits
Fall & Spring Semester

SAP329 Study Abroad - Australia - Flinders University
1-18 credits
Fall & Spring Semester

SAP330 Australia - Deakin University
1-18 credits
Fall & Spring Semester

SAP331 Study Abroad - Australia - University of Sydney
1-18 credits
Fall & Spring Semester

SAP332 From Kafka to Kundera - Two Sections
3 credits
Fall & Spring Semester

SAP333 Reading Prague: Literature - Architecture - Cultural History
3 credits
Fall & Spring Semester

SAP334 Romanticism
3 credits
Fall & Spring Semester

SAP335 Literature of Central European Coffee Houses
3 credits
Fall & Spring Semester

SAP336 Hollywood and Europe
3 credits
Spring Semester

SAP337 Contemporary Central-European Politics
3 credits
Fall & Spring Semester

SAP338 Does Central Europe Exist? Creating and Crossing Borders
3 credits
Fall & Spring Semester

SAP339 Study Abroad - University of Vienna, Strobl
1-9 credits
Fall & Spring Semester

SAP340 Brazil - CIEE
1-18 credits
Fall & Spring Semester & First & Second Summer Session

SAP343 Study Abroad - Brazil - Pontificia Universidade Catolica do Rio de Janeiro
1-18 credits
Fall & Spring Semester

SAP344 John Cabot University
1-18 credits
Fall & Spring Semester
SAP345 Study Abroad-ECUADOR-Pontificia Universidad Catolica  
1-18 credits  
Fall & Spring Semester

SAP346 Universidad Icesi  
3-18 credits  
Fall & Spring Semester & First & Second Summer Session

SAP347 Ghent University  
1-20 credits  
Fall & Spring Semester

SAP349 Study Abroad-ENGLAND - UNIVERSITY OF SOUTHAMPTON.  
1-18 credits  
England - University of Southampton.

SAP350 Study Abroad - England - University of Kent  
1-18 credits  
Fall & Spring Semester

SAP351 Study Abroad-England-University of Sussex  
1-18 credits  
Fall & Spring Semester

SAP352 Study Abroad-England-University of Essex  
1-18 credits  
Fall & Spring Semester

SAP353 Study Abroad - England - London School of Economics  
3- 6 credits  
Fall & Spring Semester

SAP354 Study Abroad-England-University of Leicester  
1-18 credits  
Fall & Spring Semester

SAP355 Study Abroad-England-Queen Mary and Westfield College  
1-18 credits  
Fall & Spring Semester

SAP356 Study Abroad - England - Buckinghamshire Chilterns University College  
1-18 credits  
Fall & Spring Semester

SAP357 Study Abroad-England-University of Westminster  
1-18 credits  
Fall & Spring Semester

SAP358 Study Abroad-England-University of East Anglia  
1-18 credits  
Fall & Spring Semester

SAP359 Study Abroad-England-Lancaster University  
1-18 credits  
Fall & Spring Semester

SAP361 Study Abroad-Chile-Univ. Diego Portales  
1-18 credits  
Fall & Spring Semester

SAP362 Study Abroad-Chile-Universidad Catolica  
1-18 credits  
Fall & Spring Semester

SAP363 Study Abroad - Chile - Universidad de Playa Ancha  
1-18 credits  
Fall & Spring Semester & First & Second Summer Session

SAP364 Fudan University  
1-20 credits  
Fall & Spring Semester & First & Second Summer Session
SAP365 Study Abroad - China - Chinese University of Hong Kong
1-18 credits
Fall & Spring Semester

SAP366 Study abroad - Zhongnan University of Economics and Law
1-18 credits
First & Second Summer Session

SAP369 Sciences Po
1-20 credits
Fall & Spring Semester

SAP370 Universite de Nantes
1-18 credits
Fall & Spring Semester

SAP371 Sweet Briar College JY France
1-18 credits
Fall & Spring Semester

SAP372 Study Abroad - France - Universite d'Orleans
1-18 credits
Fall & Spring Semester & First & Second Summer Session

SAP373 Study Abroad - France - University of Paris - MICEFA
1-18 credits
Fall & Spring Semester

SAP374 Study Abroad - France - L'Ecole Superieure de Commerce Groupe de Rennes
1-18 credits
Fall & Spring Semester

SAP375 Study Abroad - France - American University of Paris
1-18 credits
Fall & Spring Semester & First & Second Summer Session

SAP376 Classroom Europe: Poland, Germany, Austria, Turkey
3 credits
Fall & Spring Semester

SAP377 Global Crisis
3 credits
Fall & Spring Semester

SAP378 European Language Option: German or French
3 credits
Fall & Spring Semester

SAP379 Reflections of Prague
1 credit
Spring Semester

SAP382 Study Abroad - Germany - University of Tuebingen
1-18 credits
Fall & Spring Semester

SAP383 Study Abroad - Germany - University of Leipzig
1-18 credits
Fall & Spring Semester

SAP387 Study Abroad - Germany - Freie Universitaet Berlin
1-12 credits
First & Second Summer Session

SAP388 Study Abroad - Germany - University of Flensburg
1-18 credits
Fall & Spring Semester

SAP399 Study Abroad
1-18 credits
Fall & Spring Semester
INTERNATIONAL EXCHANGE & LANGUAGE PROGRAMS

STUDY ABROAD PROGRAM

SAP400 Study Abroad -Wales-Cardiff University
1-18 credits  
Fall & Spring Semester

SAP402 Study Abroad - Slovenia - University of Ljubljana
1-18 credits  
Fall & Spring Semester

SAP405 Iceland-University of Iceland
1-18 credits  
Fall & Spring Semester

SAP406 Study Abroad - New Zealand - University of Auckland
1-18 credits  
Fall & Spring Semester

SAP407 Study Abroad - Ireland - National University of Ireland, Maynooth
1-18 credits  
Fall & Spring Semester

SAP408 Ireland - University College Dublin
1-18 credits  
Fall & Spring Semester

SAP410 IES Abroad Milan Center
1-20 credits  
Fall & Spring Semester & First Summer Session

SAP411 Study Abroad-Italy-University of L’Aquila
1-18 credits  
Fall & Spring Semester & First & Second Summer Session

SAP412 Study Abroad - Italy - Universita Cattolica Del Sacro
1-18 credits  
Fall & Spring Semester

SAP413 Italy - URome
3-18 credits  
Spring Semester

SAP414 Politecnico di Milano
1-20 credits  
Fall & Spring Semester

SAP431 Study Abroad-Japan-Sophia University
1-18 credits  
Fall & Spring Semester & First & Second Summer Session

SAP432 Study Abroad-Japan-Kansai Gaidai
1-18 credits  
Fall & Spring Semester

SAP441 Study Abroad-Netherlands-Hogeschool voor Economische Studies (HES)
1-18 credits  
Fall & Spring Semester

SAP445 Study Abroad - Denmark - University of Southern Denmark
1-18 credits  
Fall & Spring Semester

SAP446 Study Abroad--Denmark--Univ. of Copenhagen
1-18 credits  
Fall & Spring Semester

SAP447 Study Abroad--Denmark--Aalborg Univ.
1-18 credits  
Fall & Spring Semester

SAP451 Mexico-Centro de Investigaciones y Docencia Economica
1-18 credits  
Fall & Spring Semester
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<th>Course Title</th>
<th>Credits</th>
<th>Semester(s)</th>
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<td>Study Abroad-Mexico-Universidad Iberoamericana</td>
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<td>Fall &amp; Spring Semester &amp; First &amp; Second Summer Session</td>
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<td>Fall &amp; Spring Semester</td>
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<td>Fall &amp; Spring Semester</td>
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<td>Finland - Sibelius Academy</td>
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<td>Fall &amp; Spring Semester</td>
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<td>SAP480</td>
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<td>Germany - Universitat Mannheim</td>
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<td>SAP482</td>
<td>Vienna - Vienna University of Economics and Business Administration</td>
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<td>SAP483</td>
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<td>Fall &amp; Spring Semester</td>
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<td>SAP484</td>
<td>Austria - University of Innsbruck</td>
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<td>Fall &amp; Spring Semester</td>
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<td>SAP485</td>
<td>Spain-Universidad Politecnica de Valencia</td>
<td>1-18</td>
<td>Fall &amp; Spring Semester</td>
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<td>SAP486</td>
<td>Study Abroad - Czech Republic - Charles University</td>
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<td>Fall &amp; Spring Semester</td>
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<td>SAP487</td>
<td>Study Abroad - Brazil - Pontificia Universidade Catolica do Rio Grande do Sul</td>
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<td>Fall &amp; Spring Semester</td>
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<td>SAP496</td>
<td>Turkey - Koc</td>
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<td>SAP497</td>
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<td>Fall &amp; Spring Semester</td>
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<td>SAP498</td>
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<td>Pontificia Universidad Comillas - Madrid</td>
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<td>Fall &amp; Spring Semester</td>
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<td>SAP503</td>
<td>Czech Republic-Charles University</td>
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<td>Fall &amp; Spring Semester</td>
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SAP572 Study Abroad-France-Universite d'Orleans
1-12 credits
Offered By Announcement Only

SAP582 Study Abroad-Germany-University of Tubingen
1-12 credits
Fall & Spring Semester
GRADUATE COURSES *
* 500 level courses appear in both the undergraduate and graduate course listing and may be considered undergraduate or graduate at the discretion of the department. Prerequisites, co-requisites and other course requirements are subject to change.

**Architecture**
- Architecture
- Real Estate Development

**Arts & Sciences**
- American Studies
- Anthropology
- Art
- Arabic
- Art History
- Biology
- Chemistry
- Classics
- Computer Science
- Ecosystem Science & Policy
- English
- French
- Geography
- German
- Geological Sciences
- Haitian
- History
- Interdisciplinary Global Studies
- International Studies
- Italian
- Latin
- Latin American Studies
- Liberal Studies
- Mathematics
- Modern Languages & Literatures
- Philosophy
- Physics
- Political Science
- Portuguese
- Psychology
- Religious Studies
- Sociology
- Spanish
- Women’s & Gender Studies
- Theatre Arts
Business
Accounting
Business
Business Law
Computer Information Systems
Economics
Executive & Special Programs
Finance
Management Science
Management
Marketing

Communication
Communication Studies
Electronic Media
Journalism
Motion Pictures
Public Relations
Visual Journalism

Education & Human Development
Educational & Psychological Studies
Kinesiology & Sport Sciences
Teaching & Learning

Engineering
Biomedical Engineering
Civil, Architectural & Environmental Engineering
Electrical and Computer Engineering
Industrial Engineering
Mechanical and Aerospace Engineering

Graduate School
Interdisciplinary Graduate Studies
Research Training

Marine & Atmospheric Science
Applied Marine Physics
Marine Affairs and Policy
Marine Biology and Fisheries
Marine Geology and Geophysics
Marine and Atmospheric Chemistry
Marine and Physical Oceanography
RSMAS – General
**Medicine**
- Biochemistry & Molecular Biology
- Biostatistics
- Cancer Biology
- Epidemiology & Public Health
- Human Genetics & Genomics
- Interdisciplinary Biomedical Studies
- Microbiology & Immunology
- Molecular Cell & Developmental Biology
- Molecular & Cellular Pharmacology
- Neuroscience
- Physical Therapy
- Physiology & Biophysics
- Program in Biomedical Sciences

**Music**
- Dance
- Instrumental Performance
- Keyboard Performance
- Music Education and Therapy
- Music Media and Industry
- Music Theory and Composition
- Musicology
- Studio Music and Jazz
- Vocal Performance

**Nursing and Health Studies**
- Health Studies
- Nursing

**International Exchange and Language Programs**
- Study Abroad Program

**University Internship**

ARC500 Architecture Theory  
3 credits Fall Semester  

ARC501 Architecture Design and Theory I  
6 credits Fall Semester  
Cultural, human and environment component and architectural responses to these: Social and aesthetic concepts, architectural psychology, climatic principles, programming analysis and design.  
PREREQUISITE: GRADUATE STANDING.

ARC502 Architecture Design and Theory II  
6 credits Spring Semester  
Technology component; materials, structure, and environmental control systems as a framework for architectural design. Construction materials and methods, structural systems, mechanical systems.  
PREREQUISITE: ARC 501.

ARC503 Architectural Design and Theory III  
6 credits Fall Semester  
Legal and economic component; government and finances as active constituents of architecture design. Zoning regulations, building codes, principles of public health, safety and welfare, market and feasibility studies.  
PREREQUISITE: ARC 502.

ARC504 Architecture Design  
6 credits Fall Semester  
Architecture Design: Comprehensive Component. Topics include zoning regulations, building codes, principles of public health, safety and welfare, market and feasibility studies.  
PREREQUISITE: ARC 503 OR GRADUATE STANDING.

ARC507 Architecture Design  
6 credits Fall & Spring Semester & First & Second Summer Session  
Elective component: student and faculty select areas of in-depth study. Topics include building types, environment, energy, community design, etc.  
PREREQUISITE: ARC503

ARC509 Architecture Design IX  
6 credits Fall & Spring Semester & First & Second Summer Session  
Elective component: student and faculty select areas of in-depth study. Topics include building types, environment, energy, community design, etc.  
PREREQUISITE: ARC 408.

ARC510 Architecture Design X  
6 credits Fall & Spring Semester & First & Second Summer Session  
Elective component: student and faculty select areas of in-depth study. Topics include building types, environment, energy, community design, etc.  
PREREQUISITE: ARC 509.
ARC511 Drawing
3 credits Fall Semester
Graphic representation and exploration of visual ideas through increased awareness of visual and graphic vocabulary, stressing projections, light, shade and shadow, perspective, and freehand sketching.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF INSTRUCTOR.

ARC512 Advanced Visual Analysis
3 credits Offered By Announcement Only
Drawing as a means of analyzing and recording visual experience. Composition, form, light, color and drawing as a primary device in the mental registration of visual experience.
PREREQUISITE: ARC 204, 112.

ARC513 Computing
3 credits Spring Semester
An introduction to new electronic design tools and technology available to architects today. Lectures on the history and future of computing in the profession.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF INSTRUCTOR.

ARC514 Michelangelo
3 credits Fall Semester
Drawing as a form of research across mediums to understand historical research and interpretation of Michelangelo's work.
PREREQUISITE: ARC 306, 112, 213 OR PERMISSION OF THE INSTRUCTOR.

ARC515 Computer Modeling
3 credits Fall & Spring Semester
Three-dimensional, computer modeling and rendering. Lecture, problem solving exercises and laboratory.
PREREQUISITE: ARC 213, 513 OR PERMISSION OF THE INSTRUCTOR.

ARC516 Architectural Watercolor Renderings
3 credits Fall Semester
This course will use freehand drawing and watercolor painting as a vehicle to study and record the urban and architectural conditions of Coral Gables and other South Florida sites. Particular emphasis will be placed on the analytical potential of sketches (recording space, light, surfaces and color).
PREREQUISITE: ARC 306 OR PERMISSION OF THE INSTRUCTOR.

ARC517 Construction Documents
3 credits Fall Semester
Working drawings and specifications. Form, content and role of constituent parts of working drawings and specifications by using case studies.
PREREQUISITE: ARC 204 AND 261.

ARC518 Documentation of Historic Architecture
3 credits First & Second Summer Session
Principles of preservation and restoration, research methods, measured drawings, surveying methods, case studies.
PREREQUISITE: ARC 204.
ARC519 Architecture and Color
3 credits                                             First & Second Summer Session
This course focuses on the theory and practice of color and its application to architectural design. Topics include color history from Newton through Alber, the relationship between color practice in science versus art, and the discipline of color in architecture from the Neoclassical movement through the Modern Movement.
PREREQUISITE: ARC 306 OR PERMISSION OF THE INSTRUCTOR.

ARC523 Interior Architecture Design
3 credits                                                             Fall Semester
Principles and technical components of interior design. Topics include activity, analysis, finishes, furniture, fixture, lighting, and acoustics.
PREREQUISITE: ARC 204 OR PERMISSION OF THE INSTRUCTOR.

ARC524 Selected Topics in Interior Architecture Design
3 credits                                                           Spring Semester
Principles and technical components of interior design. Topics include interior volumetrics, finishes, furnishings and lighting.
PREREQUISITE: ARC 204 OR PERMISSION OF THE INSTRUCTOR.

ARC525 Landscape Arch Design I
3 credits                                                    Fall & Spring Semester
Analysis and design of landscape spaces. Studies in historical precedent, gardens, parks, plazas, squares and response to architectural context.
PREREQUISITE: ARC 204 OR PERMISSION OF THE INSTRUCTOR.

ARC526 Landscape Arch Design II
3 credits                                              Offered By Announcement Only
Analysis and design of landscape spaces. Topics include ecological principles, landforms and plant materials.
PREREQUISITE: ARC 204 OR PERMISSION OF THE INSTRUCTOR.

ARC527 Architecture Photography
3 credits                                              Offered By Announcement Only
Photography with emphasis on architectural subjects. Introduction to visual principles, photographic equipment, materials, and techniques.
PREREQUISITE: ARC 204.

ARC528 Historic Preservation
3 credits                                                           Spring Semester
Basic design principles for the rehabilitation of historic buildings. Evaluating character-defining details; significance analysis; context of setting issues within historic districts; applying the Secretary of the Interior’s Standards for rehabilitation.
PREREQUISITE: ARC 204.

ARC529 Research in Design-Methods and Procedures
3 credits                                             Fall & Spring Semester
Application of research methods and procedures to design issues. Historical, descriptive, analytic, experimental research methods; tools for data manipulation and communication.
PREREQUISITE: PERMISSION OF PROGRAM DIRECTOR.
ARC530 Building Technology II: Materials & Methods.
3 credits  Fall & Spring Semester
Material characteristics of enclosure and structural systems, case studies in traditional and modern building construction; Topics include properties of building materials: wood, masonry concrete, steel and glass construction techniques; on-site and off-site processes; exterior finishes, assembles, detailing and basic building code concepts.

ARC531 Building Technology II: Structural Systems
3 credits  Spring Semester
Structural systems: The tectonics, patterns and behavior of the elements of building structures. Topics: Equilibrium, stability, vertical and lateral loads, building envelope and financial considerations.
PREREQUISITE: PHYSICS OR PERMISSION OF THE INSTRUCTOR

ARC532 Building Structures I
3 credits  First Summer Session
The structural behavior of simple frame structures. Topics include techniques to determine basic system layout and preliminary dimensioning of key subsystems and members.
PREREQUISITE: ARC 531.

ARC533 Building Structures II
3 credits  Fall Semester & Second Summer Session
The structural behavior of complex structures. Topics include prestressed systems, waffle and space trusses, curved structures and longspan buildings.
PREREQUISITE: ARC 532.

ARC534 The Palazzo in Italian Architecture
3 credits  Fall & Spring Semester
Study of the development of the Renaissance and Baroque palazzo in Rome and other important centers of art and culture. Emphasis on the socio-political context.
PREREQUISITE: ARC 382.

ARC535 Historic Italian Urbanism
3 credits  Fall & Spring Semester
Study of Italian cities and towns from medieval to contemporary times, including a comparative analysis of history and form.
PREREQUISITE: ARC 382.

ARC536 Italian Gardens
3 credits  Fall & Spring Semester
Study of Italian garden design during the Renaissance, Baroque and Mannerist periods. Emphasis on historical and political context.
PREREQUISITE: ARC 382.

ARC537 Research in Rome
3 credits  Fall & Spring Semester
An exploration of Roman history, architecture and urban form through lectures, on site study and drawing assignments. Emphasis on chronological and spatial sequence of development.
PREREQUISITE: ARC 382.
ARC541 Seminar on Town Design
3 credits  
Fall Semester  
Introduction to the lexicon of urbanism; analytical presentations of the concepts of: region, town, neighborhood, corridor, district, and building type; interdisciplinary presentations, review, and criticism of current town and urban design projects.

ARC542 Seminar on Housing
3 credits  
Offered By Announcement Only  
Introduction to domestic building typology; exploration of the concepts of low, medium, and high density housing with attention to social, environmental, and economic issues; presentations of current case studies.  
PREREQUISITE: ARC 306 OR PERMISSION OF INSTRUCTOR.

ARC543 Seminar on Retrofit of Suburbia
3 credits  
Offered By Announcement Only  
Introduction to the critical reconstitution of the city; theory and history of the concepts of revitalization and redevelopment; presentations, review, and criticism of current case studies.  
PREREQUISITE: ARC 306 OR PERMISSION OF INSTRUCTOR.

ARC544 The Architecture of Palladio
3 credits  
Fall Semester  
On site study of the architecture and urbanism of Andrea Palladio. Emphasis on the artistic precedents of the Veneto Region.  
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

ARC545 Urban Composition
3 credits  
Offered By Announcement Only  
Survey and analytical review of urban rooms as the vessel of human activity in urban culture. Study of proportional and compositional aspects of urban rooms together with economic, social, and cultural factors. Readings and discussion format.  
PREREQUISITE: ARC 306, 502, OR PERMISSION OF INSTRUCTOR.

ARC546 Studies of Havana
3 credits  
Spring Semester  
Analysis of the physical structure of a major city and its environments including an exploration of its history and iconographic themes, mapping and building studies.

ARC547 Architecture and Urban Identity
3 credits  
Offered By Announcement Only  
Study of the relationship between architecture and urbanism focusing on the ways by which architecture provides urban identity and image of place. Case studies relating monuments, fabric and urban plans to their culture, time and place. Lecture and seminar format.  
PREREQUISITE: ARC 306 OR PERMISSION OF INSTRUCTOR.

ARC548 Seminar in Community Development
3 credits  
Offered By Announcement Only  
Study of the contemporary context for the development of the physical environment. Examination of public, private and third sector implementation of building and community design. Format: guest speakers, readings, discussions, and seminar.  
PREREQUISITE: ARC 305, 502, OR PERMISSION OF INSTRUCTOR.
ARC550 Professional Lecture Series

3 credits  
Fall & Spring Semester
Exposure to the various professional disciplines in South Florida that make contributions to the design process. Case study analysis and evaluation of current building project, from time of initial formulation through completion, including research, diagrammatic studies, site visits and lectures.

ARC551 Contemporary Theories of Architecture

3 credits  
Offered By Announcement Only
Theoretical basis of modern architecture and different present currents and movements. Agrarianism, technism, orthodoxy, brutalism, scientism, revivalism, consumerism, rationalism, classicism.
PREREQUISITE: ARC 204 OR PERMISSION OF INSTRUCTOR.

ARC553 Structural Design Theory

3 credits  
Offered By Announcement Only
Relationship of structural systems to architectural design. Case studies in theories of structure, form and construction.
PREREQUISITE: ARC 306 AND CAE 313.

ARC554 Architecture of South Florida

3 credits  
Offered By Announcement Only
History of architecture and human settlements. Studies of significant architectural landmarks and urban design of the South Florida Region, chronological growth of Miami, Miami Beach, Coral Gables, Key West and Palm Beach.
PREREQUISITE: ARC 204 OR PERMISSION OF THE INSTRUCTOR.

ARC557 Design and Fabrication Techniques: Carved Panels

3 credits  
First & Second Summer Session
Design, construction and detailing of wood as applied to furnishings and interiors. Focus: low and high relief carved wood panels. Workshop based course including research, exercises, measuring, documentation and a final project.

ARC558 Theories of Landscape Architecture

3 credits  
Fall Semester
Leading theories of landscape architecture which have influenced current considerations of nature, landscape and design.
PREREQUISITE: ARC 204 OR PERMISSION OF INSTRUCTOR.

ARC561 Building Technology I: Materials and Methods.

3 credits  
Fall Semester
Material characteristics of enclosure and structural systems, case studies in traditional and modern building construction. Topics include properties of building materials: wood, masonry concrete, steel and glass construction techniques; on-site and off-site processes; exterior finishes; assemblies, detailing and basic building code concepts.
PREREQUISITE: NONE
COREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

ARC562 Environmental Building Systems I

3 credits  
First Summer Session
Environmental and Safety Systems. Topics include mechanical - HVAC and conveyors; plumbing - fixtures and pipes; electrical - equipment and wiring design; safety systems - fire safety and emergency and signal systems.
PREREQUISITE: ARC 561 OR PERMISSION OF INSTRUCTOR.
ARC563 Environmental Building Systems II

3 credits  
Spring Semester

Principles and applications of light and acoustics. Topics include natural and artificial light - planning for sunlight, problems and solutions for interior and exterior illumination; sound - properties, problems and solutions in new and existing spaces electrical equipment and wiring design. 
PREREQUISITE: ARC 562 OR PERMISSION OF INSTRUCTOR.

ARC567 History of Architecture I: Ancient, Medieval and Renaissance

3 credits  
Fall Semester

Studies of the history of architecture and urban design. Focus on religious and secular monuments and their settings, domestic architecture and infrastructure, regional constructional and compositional traditions from prehistory to the end of the sixteenth century. Co-requisite: ARC 501.

ARC568 History of Architecture II: Baroque through Contemporary

0-3 credits  
Spring Semester

Studies of the history of architecture and urban design. Focus on religious and secular monuments and their settings, domestic architecture and infrastructure, regional constructional and compositional traditions from the end sixteenth century through to the present. Co-requisite: ARC 502.

ARC569 Directed Readings

3 credits  
Fall & Spring Semester & First & Second Summer Session

A structured program of readings and essays organized by the student and his/her graduate supervisor constituting a preparation for graduate research in the student's chosen area of interest.
PREREQUISITE: PERMISSION OF PROGRAM DIRECTOR.

ARC570 Modern Architecture

3 credits  
Spring Semester

History of architecture, landscape, and city design in the modern era.

ARC571 Ancient Architecture

3 credits  
Fall Semester

History of architecture and human settlements. Western European prehistory, Egypt, Mesopotamia, Persia, Aegean and Mediterranean, Greece, Rome.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

ARC572 Selected Topics in World Architecture

3 credits  
Fall Semester

History of architecture and human settlements. Islamic Near East, North Africa, Hindu and Buddhist India, Nepal, S. E. Asia, China, Japan, Pre-Columbian America.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

ARC573 Early Christian, Byzantine, and Medieval Architecture

3 credits  
Fall Semester

History of architecture and human settlements. Early Christian and Byzantine architecture in Italy, the Near East, Greece, North Africa, Eastern Europe, Medieval architecture in Western Europe.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.
ARC574 Renaissance Architecture
3 credits Fall Semester
History of architecture and human settlements. Renaissance and Baroque architecture in Italy, France, Spain and Portugal, Great Britain, Austria, Germany, and neighboring countries.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

ARC575 Colonial Architecture
3 credits Fall Semester
History of architecture and human settlements. Iberian and British Colonies from the 16th through the 19th centuries: North and South America, Caribbean, India and Africa.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

ARC576 19th and 20th Century Architecture
3 credits Fall Semester
History of architecture and human settlements. America and Europe during the 19th and 20th centuries; cultural, technological and theoretical development.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

ARC577 The Architecture of Alvar Aalto
3 credits Fall Semester
An examination of the architecture of Alvar Aalto through the analysis of selected buildings.
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

ARC578 Italian Rationalist Architecture
3 credits Offered By Announcement Only
History of Italian architecture and urban design between 1914 and 1950: cultural, technological, and theoretical developments; relationship between architecture, politics and propaganda; related survey of the period in other countries (France, German, Soviet Union).
PREREQUISITE: ARC 305 OR PERMISSION OF THE INSTRUCTOR.

ARC581 Special Problems
3 credits Fall & Spring Semester & First & Second Summer Session
Group or individual investigations of significant architectural issues, offered by special arrangement only.
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

ARC582 Special Problems
3 credits Fall & Spring Semester & First & Second Summer Session
Group or individual investigations of significant architectural issues, offered by special arrangement only.
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

ARC583 Special Problems
3 credits Fall & Spring Semester & First & Second Summer Session
Group or individual investigations of significant architectural issues, offered by special arrangement only.
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.
ARC584 Special Problems
1-3 credits  Fall & Spring Semester & First & Second Summer Session
Group or individual investigations of significant architectural issues, offered by special arrangement only.
PREREQUISITE: PERMISSION OF PROGRAM DIRECTOR.

ARC585 Special Problems
1-3 credits  Fall & Spring Semester & First & Second Summer Session
Group or individual investigations of significant architectural issues, offered by special arrangement only.
PREREQUISITE: PERMISSION OF PROGRAM DIRECTOR.

ARC586 Special Problems
1-3 credits  Fall & Spring Semester & First & Second Summer Session
Group or individual investigations of significant architectural issues, offered by special arrangement only.
PREREQUISITE: PERMISSION OF PROGRAM DIRECTOR.

ARC590 History of Cities
3 credits  Fall & Spring Semester
Historical overview of the origin of cities and the development of cities in the East, West, and New World. Focus on the nature of the industrial revolution and the development of the industrial city and contemporary urban settlements.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

ARC593 Computer Animation
3 credits  Spring Semester
Explores the use of computer animation and advanced visualization techniques in architecture with emphasis on texture and lighting, spatial choreography and story-boarding.
PREREQUISITE: ARC 415 OR PERMISSION OF INSTRUCTOR.

ARC594 Geographic Information Systems in Urban Design
3 credits  Spring Semester
Exploration of Geographic Information Systems (GIS) in urban design. Principles of GIS and their application to spatial analysis, data management and visualization.
PREREQUISITE: ARC 213 OR 513 OR PERMISSION OF INSTRUCTOR.

ARC596 Interactive Multimedia in Design
3 credits  Spring Semester
Integration of text, video, sound, and computer graphics to create an interactive electronic information medium.
PREREQUISITE: ARC 213 OR 513 OR PERMISSION OF INSTRUCTOR.

ARC601 Urban Design I: Urban Form and Types/Form-Based Codes
6 credits  Second Summer Session
Introduction to urban principles, documentation, lexicon of urbanism, urban codes, and architectural guidelines (Studio Format - Rome Program).

ARC602 Urban Design II: General Urban to Urban Core.
6 credits  Fall Semester
Studio projects focusing on urban retrofit and the repair of suburbia. Design topics may include typo-morphological studies, sustainable development, downtown redevelopment, neighborhood retrofit, urban agriculture, etc.
PREREQUISITE: ARC 601.
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ARC603 Urban Design III: Regional/Informal Urbanism.
6 credits Spring Semester
Studio projects focusing on regional design, everyday urbanism, informalities and other urbanisms. Design topics may include open space and rural design, informal communities, affordable and manufactured housing, etc.
PREREQUISITE: ARC 602.

ARC607 Architecture Design
6 credits Fall & Spring Semester & First & Second Summer Session
Elective component: student and faculty select areas of in-depth study. Topics include building types, environment, energy, community design, etc.
PREREQUISITE: ARC 503.

ARC608 Architecture Design
6 credits Fall & Spring Semester & First & Second Summer Session
Specialization component: student and faculty select areas of in-depth study in housing. Low-income housing, elderly housing, suburban housing, housing types, etc.
PREREQUISITE: ARC 607.

ARC609 Architecture Design
6 credits Fall & Spring Semester & First & Second Summer Session
Comprehensive project. Programming, design development, formulation of alternative solutions, detailing, presentation.
PREREQUISITE: ARC 608.

ARC610 Architecture Design Degree Project
6 credits Fall & Spring Semester & First & Second Summer Session
Special component: student/faculty selected area of special study.
PREREQUISITE: ARC 609.

ARC611 Architecture Design and Research
6 credits Fall Semester
Documentation, investigation and research of the stylistic and constructive characteristics of Roman buildings and monuments. Focus on factual documentation.

ARC612 Architecture Design and Research
6 credits Spring Semester
Research and investigation of urbanism and the construction of the city through compositional exercises.

ARC615 Visualization Techniques
1 credit Second Summer Session
Survey of digital and analogue representation techniques for urban designers.

ARC621 History-Theory II: Housing, Transportation and Infrastructure.
3 credits Fall Semester
Part I: Survey of housing theories and projects with emphasis on morphological context, typology and composition - focus on topics of modernity. Part II: Introduction to thoroughfare design and walkability principles; description of urban, suburban, rural and regional infrastructure.
3 credits  
**Spring Semester**  
Advanced survey of urban design theories in print and practice - emphasis on issues of modernity. (Seminar Format)

ARC623 Public Participation Methods - Charrette with MRED+U Program.  
3 credits  
**Spring Semester**  
Introduction to planning and public participation methods. Design workshop in collaboration with students in the master in Real Estate and Urbanism program. (Some travel may be required)

ARC624 Architecture Theory  
3 credits  
**Spring Semester**  
Review and criticism of current theoretical work in architecture. Design theory, language, typology, image, form, context. 
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF THE INSTRUCTOR.

ARC625 Roman Architecture and Urbanism I  
3 credits  
**Fall Semester**  
Historical overview of architecture and town planning in ancient Rome, from the Etruscan period through the Imperial period.

ARC652 Management of Professional Practice  
3 credits  
**Fall Semester**  
Overview of the practice and the profession, legal and ethical concerns, business types and management practices, traditional and non-traditional practices and services, contracts and contractual relationships, disputes and risk management. 
PREREQUISITE: ARC 502. LIMITED TO ARCHITECTURE STUDENTS.

ARC696 Advanced Topics  
3 credits  
**Spring Semester**  
Subject matter offerings based upon student demand and availability of faculty. Subtitles describing the topics will be shown in the printed class schedule, following the title "Advanced Topics". 
PREREQUISITE: PERMISSION OF THE PROGRAM DIRECTOR.

ARC699 Directed Research  
1-6 credits  
**Fall & Spring Semester & First & Second Summer Session**  
Individually supervised projects. Required 6 credit course for all Master of Architecture in Computing students who exercise final project rather than thesis option. 
PREREQUISITE: ARC 529 OR EQUIVALENT, APPROVED THESIS OR FINAL PROJECT PROPOSAL AND PERMISSION OF INSTRUCTOR.

ARC701 Masters Final Project  
6 credits  
**Fall & Spring Semester & First & Second Summer Session**  
Individually supervised projects. Required as a 6 credit course for all Master of Architecture in Computing students electing a final project. 
PREREQUISITE: AN APPROVED FINAL PROJECT PROPOSAL AND PERMISSION OF SUPERVISING FACULTY.
ARC710 Master's Thesis
1-6 credits Fall & Spring Semester & First & Second Summer Session
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.
PREREQUISITE: PERMISSION OF THE PROGRAM DIRECTOR.

ARC720 Research in Residence
0 credit Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis or final project for the master's degree after the student has enrolled for the permissible cumulative total in ARC 699 or ARC 710 (usually six credits). Credit not granted. May be regarded as full-time residence.
PREREQUISITE: PERMISSION OF THE PROGRAM DIRECTOR.

REAL ESTATE DEVELOPMENT

RED601 Introduction to Real Estate Development and Urbanism.
3 credits Fall Semester
Fundamentals of real estate development of urban places, including the many challenges of the development process such as analyzing market sectors and development opportunities, comprehending the development context of regulation, public policy and politics, raising investment capital, assembling land, program formulation, building types, construction management, marketing, and sales.

RED610 Financing Urban Real Estate Development
3 credits Fall Semester
Concepts and techniques for analyzing financial decisions in property development and investment including: real estate economics and investment performance measurement, leasing and property income streams, pro forma analysis, basics of equity and debt valuation, income tax and leverage considerations, mortgages, and deal structures. Emphasis financing individual projects.

RED620 Real Estate Law
3 credits Fall Semester
Fundamentals of law and the entitlement process, including contractual aspects of real estate development, finance, management and ethical issues and a real-world overview of the review and approvals process.

RED630 Market Analysis for Urban Markets
3 credits Fall Semester
Identification of critical market factors that determine development opportunities. Topics include business and construction cycles, regional and urban growth trends, commercial and industrial location theories, and advanced demographic analysis and projection techniques to project and analyze occupancy, rental growth, absorption, and competitive supply.

RED640 National Charrette Institute (NCI)
1 credit Spring Semester
RED650 Complex Urban Real Estate Transactions
3 credits
Spring Semester
Real estate finance, law, and deal structuring from the perspective of developers.
Using the case study method, the course explores the legal components and the skills
needed for drafting the documentation involved in sophisticated real property transactions,
as well as complex original financings. prerequisite: Successful completion of
Real Estate Finance and Real Estate Law.
PREREQUISITE: REAL ESTATE FINANCE AND REAL ESTATE LAW

RED660 Urban infill, Preservation & Mixed Use Development.
3 credits
Spring Semester
Builds students' competencies for infill and redevelopment practice focusing on:
mixed-use development, transit oriented development, barriers and solutions for
urban infill development, urban site analysis, repositioning of urban land, vacant
and underutilized properties, long-term land leases, tax incentives, historic preservation,
public-private partnerships, business improvement districts, tax increment financing,
community (re)development districts, parking strategies, and urban housing types.

RED670 construction and Project Management
3 credits
Spring Semester
Management of construction projects including legal considerations and techniques
of management science applied to construction. Includes engineering methods of
cost and time estimating, and exercises in applications of engineering economics,
flow charts, tracking progress, construction contracts, indemnity agreements, and
network planning techniques including CPM and PERT.

RED680 Entrepreneurship: Building A Real Estate Development Company
3 credits
Spring Semester
Focuses on management and business practices for building new urban real estate
firms capable of leading the industry and assuming competitive advantages over
conventional models.

RED690 Integrated Real Estate Development Case Studies Practicum
3 credits
First & Second Summer Session
Students integrate and apply their learning and skills to complex problem-solving
involving a series of intensive real world cases of urban real estate development.
Focuses on project feasibility and helps hone the required set of development skills.

RED699 Capstone: Real Estate Development and Urbanism Charrette
3 credits
First & Second Summer Session
An intensive real estate development and urban design studio in which students
are part of a multi-disciplinary team on an urban development project. Focuses
on comprehensive analysis, project planning, feasibility and program development
through the application of advanced development skills in an urban context.
AMS501 SENIOR PROJECT
3 credits  
Spring Semester
All majors must complete either an individual research project or an internship at a local cultural or civic institution. Either option must be approved by the program director.
PREREQUISITE: SENIOR STANDING

AMS505 HONORS THESIS
3 credits  
Spring Semester
American Studies majors with a cumulative GPA of at least 3.5 in AMS courses and an overall GPA of at least 3.0 may earn departmental honors by completing AMS505: honors thesis. Candidates for departmental honors are responsible for finding a faculty member to serve as the thesis advisor. Students would take AMS 501 in the fall semester or the senior year and AMS 505 in the spring to complete the honors thesis.
PREREQUISITE: SENIOR STANDING, MINIMUM GPA 3.5. PERMISSION OF PROGRAM DIRECTOR

ANTHROPOLOGY

APY501 Methods of Anthropological Research
3-6 credits  
Spring Semester
Concentration on research methods for Cultural, Archaeological, Linguistic, and/or Biological Anthropology.
PREREQUISITE: SIX CREDITS IN ANTHROPOLOGY AT 300 LEVEL OR ABOVE.

APY502 Field Studies in Anthropology
3-6 credits  
Fall & Spring Semester & First Summer Session
Field research in advanced topics in Cultural, Archaeological, Linguistic and/or Biological Anthropology. Preparation of data for professional presentation and publication is stressed.
PREREQUISITE: SIX CREDITS IN ANTHROPOLOGY AT 300 LEVEL OR ABOVE AND WRITTEN PERMISSION FROM INSTRUCTOR.

APY505 Museum Internship
3 credits  
Fall & Spring Semester
Field work and on-site experience in museum studies conducted in conjunction with the major museums in Miami. Training and research in methods and techniques in museology.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

APY506 Workshop in Anthropology
3-6 credits  
Fall & Spring Semester
This course is designed for upper level and graduate students to participate in special topics in Anthropology and related fields.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

APY512 Advanced Medical Anthropology
3 credits  
Fall & Spring Semester
Applications of theories and methods of medical anthropology to problems in human health and disease.
PREREQUISITE: APY 413, OR THREE CREDITS IN NURSING, OR THREE CREDITS IN EPIDEMIOLOGY AND PUBLIC HEALTH, OR PERMISSION OF THE INSTRUCTOR.
ANTHROPOLOGY

APY518 Advanced Seminar in Anthropology
3 credits Fall & Spring Semester
Specialized topics in Anthropology to involve students into current research specializations.
PREREQUISITE: SIX CREDITS IN ANTHROPOLOGY AT 300 LEVEL OR ABOVE OR PERMISSION OF INSTRUCTOR.

ART

ART501 Advanced Painting III
1-6 credits Fall & Spring Semester
Course content decided between student and professor.
PREREQUISITE: ART 402.

ART502 Advanced Painting IV
1-6 credits Fall & Spring Semester
Continuation of ART 501.
PREREQUISITE: ART 501

ART503 Advanced Painting V
1-6 credits Fall & Spring Semester
Course content decided between student and professor. An independent study course may be repeated.
PREREQUISITE: ART 502

ART504 Advanced Painting VI
1-6 credits Offered By Announcement Only
Course content decided between student and professor. An Independent Study course may be repeated.
PREREQUISITE: ART 503

ART505 Advanced Painting VII
1-6 credits Offered By Announcement Only
Current readings and/or technical concerns not covered in the regular curriculum. Course content will vary each semester.
PREREQUISITE: ART 504

ART509 Independent Study in Other Media
1-6 credits Fall & Spring Semester
Course content decided between student and professor. Independent Study course may be repeated.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

ART510 Advanced Photography III
3 credits Fall & Spring Semester
Course content decided between student and professor.
PREREQUISITE: ART 411.

ART511 Advanced Photography IV
3 credits Fall & Spring Semester
Continuation of ART 510.
PREREQUISITE: ART 510.

ART512 Independent Study in Photography
1-6 credits Fall & Spring Semester
Course content decided between student and professor. An independent Study course may be repeated.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
ART517 Advanced Sculpture III
3 credits Fall & Spring Semester
Examination of ongoing work in relationship to historical and contemporary interpretations
issues.
PREREQUISITE: ART 418 AND PERMISSION OF INSTRUCTOR

ART518 Advanced Sculpture IV
3 credits Fall & Spring Semester
Continuation of ART 517.
PREREQUISITE: ART 517.

ART519 Independent Study in Sculpture
1-6 credits Fall & Spring Semester
Course content decided between student and professor. An Independent Study course
may be repeated.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

ART551 Intaglio/Relief IV
3 credits Offered By Announcement Only
Advanced work in intaglio/relief processes: course requirements decided between
student and professor.
PREREQUISITE: ART 451.

ART552 Lithography IV
3 credits Offered By Announcement Only
Advanced work in lithography: course requirements decided between student and professor.
PREREQUISITE: ART 452.

ART553 Silkscreen IV
3 credits Offered By Announcement Only
Advanced work in silkscreen.
PREREQUISITE: ART 453.

ART554 Computer Assisted Printmaking
3 credits Offered By Announcement Only
Advanced work in computer assisted printmaking; course requirements decided between
student and professor.
PREREQUISITE: ART 454 OR PERMISSION OF INSTRUCTOR.

ART555 Topics in Printmaking
1-6 credits Offered By Announcement Only
Current readings and/or technical concerns not covered in the regular curriculum.
Course content will vary each semester.
PREREQUISITE: ANY 400 LEVEL PRINTMAKING CLASS.

ART562 Contemporary Ceramic Art
3 credits Fall & Spring Semester
Development of artistic style and technical abilities in relation to contemporary
trends in ceramic art.
PREREQUISITE: ART 462 OR ART 463 OR PERMISSION OF INSTRUCTOR
ART563 Independent Study in Ceramics/Glass
1-6 credits    Fall & Spring Semester
Course content decided between student and professor. An Independent Study course may be repeated.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

ART564 Directed Research and Projects in Ceramics/Glass
3 credits                                                    Fall & Spring Semester
Ceramic/glass approaches from early history to contemporary period, and the development of technical ability.
PREREQUISITE: ART 561 OR PERMISSION OF INSTRUCTOR.

ART591 Portfolio/Business of Design
3 credits                                              Offered By Announcement Only
Individually supervised graphic design portfolio. Professional practices in design.
PREREQUISITE: ART 491.

ART592 Special Projects/Multimedia/Portfolio
3 credits                                              Offered By Announcement Only
Video Art, print design, illustration or multimedia portfolio preparation.
PREREQUISITE: ART 292

ART593 Seminar in Professional Practices
1-6 credits    Fall & Spring Semester
Advanced course with a required placement in a professional design or multimedia setting. Classroom sessions on professional topics and issues. Portfolio required.
PREREQUISITE: SENIOR STANDING.

ART599 Exhibition Preparation
3 credits                                                    Fall & Spring Semester
A seminar class devoted to the preparatory work needed to plan and promote a solo exhibition, including installation/lighting concerns. Preliminary written assignments will also be given in preparation for ART 710 Thesis.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

ART601 Advanced Painting VIII
1-6 credits    Fall & Spring Semester
Professional and concentrated experiences in media and subject matter decided in conference between candidate and instructor.
PREREQUISITE: ART 504

ART602 Advanced Painting ix
1-6 credits    Fall & Spring Semester
Continuation of ART 601.
PREREQUISITE: ART 601

ART603 Problems in Studio Art
1-6 credits    Fall & Spring Semester
Course content will be decided in conference between candidate and instructor. This course may be repeated for credit.
PREREQUISITE: PERMISSION OF CHAIRMAN.
ART604 Seminar in Studio Art
3 credits
Spring Semester
Special topics in selected area of studio art.
PREREQUISITE: PERMISSION OF CHAIRMAN.

ART610 Photography
3 credits
Fall & Spring Semester
Content decided in conference between candidate and instructor.
PREREQUISITE: COMPLETION OF 500 LEVEL PHOTOGRAPHY COURSES.

ART611 Photography
3 credits
Fall & Spring Semester
Continuation of ART 610.
PREREQUISITE: ART 610.

ART617 Sculpture
3 credits
Fall & Spring Semester
Content decided in conference between candidate and instructor.
PREREQUISITE: COMPLETION OF 500 LEVEL SCULPTURE COURSES

ART618 Sculpture
3 credits
Fall & Spring Semester
Continuation of ART 617.
PREREQUISITE: ART 618.

ART651 Intaglio/Relief V
3 credits
Offered By Announcement Only
Advanced intaglio/relief processes: course requirements decided between candidate and professor.
PREREQUISITE: COMPLETION OF 500 LEVEL INTAGLIO/RELIEF COURSE.

ART652 Lithography V
3 credits
Offered By Announcement Only
Advanced lithography. Course requirements decided between candidate and professor.
PREREQUISITE: COMPLETION OF 500 LEVEL LITHOGRAPHY COURSE

ART653 Silkscreen V
3 credits
Offered By Announcement Only
Advanced work in silkscreen.
PREREQUISITE: ART 553.

ART654 Computer Assisted Printmaking
3 credits
Offered By Announcement Only
Advanced work in computer assisted printmaking; course requirements decided between candidate and professor.
PREREQUISITE: ART 554 OR PERMISSION OF INSTRUCTOR.

ART661 Ceramics
3 credits
Fall & Spring Semester
Content to be decided in conference between candidate and instructor.
PREREQUISITE: COMPLETION OF 500 LEVEL CERAMICS COURSES.
ART

ART662 Ceramics
3 credits  Fall & Spring Semester
Continuation of ART 661.
PREREQUISITE: ART 661 OR PERMISSION OF INSTRUCTOR.

ART681 Writing About Art
3 credits  Fall Semester
Writing about art on a professional level.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

ART691 Graphic Design
3 credits  Fall & Spring Semester
Advanced graduate projects in graphic design.
PREREQUISITE: GRADUATE STANDING.

ART692 Multimedia
3 credits  Fall & Spring Semester
Advanced graduate projects in multimedia.
PREREQUISITE: GRADUATE STANDING.

ART710 Master's Thesis
1-6 credits  Fall & Spring Semester
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

ART720 Research in Residence
0 credit  Fall & Spring Semester
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in ART 710 (usually six credits). Credit not granted. May be regarded as full time residence.

ARABIC

ARB591 Directed Readings
1-3 credits  Offered By Announcement Only
PREREQUISITE: ONE ARB COURSE AT 200-LEVEL OR HIGHER AND PERMISSION OF THE INSTRUCTOR.

ART HISTORY

ARH505 Problems in Art History
3 credits  Fall & Spring Semester
A means by which the student of advanced standing may investigate areas of a specialized nature, or those which are not offered as a regular part of the curriculum. Course content will be decided in joint conference between student and instructor.
PREREQUISITE: ANY 300-LEVEL OR 400-LEVEL COURSE IN ART HISTORY AND PERMISSION OF INSTRUCTOR.

ARH506 Problems in Art History
3 credits  Fall & Spring Semester
A means by which the student of advanced standing may investigate areas of a specialized nature, or those which are not offered as a regular part of the curriculum. Course content will be decided in joint conference between student and instructor.
PREREQUISITE: ANY 300-LEVEL OR 400-LEVEL COURSE IN ART HISTORY AND PERMISSION OF INSTRUCTOR.
ARH507 Museum Studies Seminar
3 credits
Offered By Announcement Only
Administrative functions of local art museums; researching selected art works in their permanent collections.
PREREQUISITE: 6 CREDITS IN HISTORY

ARH508 Museum Exhibition
3 credits
Offered By Announcement Only
Organizing an art museum exhibition, and participating in the installation. Writing and composing the catalogue.
PREREQUISITE: 6 CREDITS OF ART HISTORY

ARH509 Museum Internship
1-3 credits
Fall & Spring Semester
UM sponsored internship with Miami-area museum.
PREREQUISITE: BY PERMISSION OF HEAD OF ART HISTORY.

ARH510 Arts Administration Internship
1-3 credits
Fall & Spring Semester
UM sponsored internship with Miami-area arts institution.
PREREQUISITE: BY PERMISSION OF HEAD OF ART HISTORY.

ARH511 ARTLAB @ THE LOWE
3 credits
Spring Semester
Organizing an art exhibition at the Lowe Art Museum. Taught by a different faculty member each year.
PREREQUISITE: 9 CREDITS IN ART HISTORY, GRADUATE STANDING, OR BY PERMISSION OF INSTRUCTOR

ARH530 Seminar in Art History
3 credits
Offered By Announcement Only
Special topics in western and nonwestern art. Semester's topic will be announced.
PREREQUISITE: PERMISSION OF INSTRUCTOR

ARH540 Seminar in The History of Museums and Collecting
3 credits
Offered By Announcement Only
History of museums and collecting practices in western Europe and the United States from the sixteenth to the twentieth century.
PREREQUISITE: 9 CREDITS IN ART HISTORY, GRADUATE STANDING, OR BY PERMISSION OF INSTRUCTOR

ARH550 Seminar in Theory and Methodology in the History of Art
3 credits
Offered By Announcement Only
Basic methodologies that inform the discipline of art history and an introduction to the key authors and ideas that have shaped and continue to shape how critics and art historians write about art.
PREREQUISITE: 9 CREDITS IN ART HISTORY, GRADUATE STANDING OR BY PERMISSION OF INSTRUCTOR

ARH560 Seminar in Nineteenth and Twentieth Century Art
3 credits
Offered By Announcement Only
Special topics including museum practices and theory, women’s art and contemporary issues.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
ARH570 Seminar in Non-European Art
3 credits
Offered By Announcement Only
Special Topics in African, Oriental, Oceanic, Native North or South American art traditions.
PREREQUISITE: ARH 133, 134, OR PERMISSION OF INSTRUCTOR.

ARH598 Seminar in Contemporary American Art
3 credits
Fall Semester
Issues in Art since 1960: Aesthetic theories and ideological issues generated in contemporary art as expressed in the writing of artists and art critics.
PREREQUISITE: ARH 344. UNDERGRADUATES MUST HAVE PERMISSION OF INSTRUCTOR.

ARH605 Problems in Art History
3 credits
Fall & Spring Semester
Course content will be decided in joint conference between student and instructor.

ARH606 Problems in Art History
3 credits
Fall & Spring Semester
Course content will be decided in joint conference between student and instructor.

ARH681 Directed Reading and Research
1- 3 credits
Offered By Announcement Only
Individual supervised research project on a specific artist, work of art, or period.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

ARH682 Directed Reading and Research
1- 3 credits
Offered By Announcement Only
Individual supervised research project on a specific artist, work of art, or period.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

ARH710 Master's Thesis
1- 6 credits
Fall & Spring Semester
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

BIOLOGY

BIL511 Biometry
3 credits
Offered By Announcement Only
Descriptive and analytical statistics as used in biology. Emphasizes sampling, presentation of quantitative data, probability theory applications, distributions, parametric and non-parametric test procedures.
PREREQUISITE: ONE SEMESTER OF STATISTICS AND ONE YEAR OF CALCULUS.

BIL520 Evolution
3 credits
Offered By Announcement Only
Evolutionary mechanisms and pathways: sources of hereditary variation, evolutionary forces, origins of adaptations, speciation, macroevolution, origin of life and humankind.
PREREQUISITE: BIL 250.
BIL521 Systematics
3 credits  
Offered By Announcement Only
Concepts and methods in phylogenetic systematics. Lectures, discussions, and computer labs, 3 hours.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BIL523 Advanced Biology of Marine Invertebrates
4 credits  
Offered By Announcement Only
Detailed study of major phyla of marine invertebrates. Special emphasis on taxa found in waters off southern Florida. Field course. Lectures, laboratory, special projects, and seminars.
PREREQUISITE: BIL 235 AND 321.

BIL525 Advanced Herpetology
3 credits  
Offered By Announcement Only
Systematics, biogeography, and evolutionary biology of amphibians and reptiles, with emphasis on modern families. Lecture, 2 hours; laboratory, 3 hours.
PREREQUISITE: BIL 250: BIL 360 STRONGLY RECOMMENDED

BIL526 Studies in the Biology of Mycorrhizae
2 credits  
Offered By Announcement Only
Readings, discussions and laboratory exercises concerning the biology of mutualistic root-inhabiting fungi and their plant hosts. Topics will vary by semester, may be repeated for credit.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BIL527 Biology of Fungi
5 credits  
Spring Semester
Physiology and ecology of the major groups of fungi, especially those of importance as pathogens or mutualists. Combined lecture and laboratory.
PREREQUISITE: BIL 250: BIL 360 STRONGLY RECOMMENDED

BIL531 Advanced Field Ecology
5 credits  
Offered By Announcement Only
Principles of and practical experience in quantitative sampling of community structure, plant and animal populations, and animal activities. Emphasis on individual projects. Lecture, 3 hours; laboratory and field, 10 hours alternate Saturdays plus projects.
PREREQUISITE: ONE SEMESTER OF ECOLOGY AND BIL 511 OR ANOTHER STATISTICS COURSE.

BIL532 Stable Isotope Ecology
3 credits  
Offered By Announcement Only
Stable isotope analysis applied to ecological questions such as nutrient cycling, photosynthesis and trophic level studies.
PREREQUISITE: BIL 235 OR PERMISSION OF INSTRUCTOR

BIL535 Molecular Ecology
3 credits  
Offered By Announcement Only
Molecular markers and analyses, and their applications to different problems in biology. Appropriate sampling, methods for assessing genetic diversity and differentiation. Approaches to studying gene flow, tools for behavioral ecology, remote sampling, tracking individuals, and paternity analysis, hybridization and speciation, DNA barcodes, and gene expression from a population biological perspective.
PREREQUISITE: BIL 250
BIL536 Molecular Ecology Laboratory
1 credit Offered By Announcement Only
Laboratory techniques, molecular tools, applications, and analysis methods commonly used by researchers in the areas of molecular ecology and population genetics.
PREREQUISITE: BIL 535

BIL537 Ecosystem Ecology
3 credits Offered By Announcement Only
Concepts and models of energy and nutrient flow, food webs, successional processes, human influences and effects of spatial heterogeneity.
PREREQUISITE: BIL 235 OR PERMISSION OF INSTRUCTOR.

BIL539 Wildlife Resource Philosophy and Policy
3 credits Offered By Announcement Only
Attitudes, philosophy, and policies that govern management of wildlife resources worldwide. Methods to influence public support for implementation of sound wildlife resource management.
PREREQUISITE: BIL 332.

BIL540 Ethology and Behavioral Ecology
3 credits Offered By Announcement Only
Evolutionary and comparative approach to concepts in animal behavior emphasizing function and mechanism. Topics include genetics of behavior, orientation, foraging, communication, and social behavior.
PREREQUISITE: BIL 235 AND EITHER BIL 241 OR 341 OR PERMISSION OF INSTRUCTOR.

BIL548 Bioinformatics Algorithms
3 credits Offered By Announcement Only
PREREQUISITE: (CSC120 OR CSC210) AND (BIL150 OR BIL104 OR BIL352 OR BIL552)

BIL552 Bioinformatics Tools
3 credits Offered By Announcement Only
Databases and tools of bioinformatics as relevant to research in genomics and molecular biology. Bioinformatics applications. Information retrieval, analytical tools, BLAST searches, promoter analysis, protein structure- function analysis and various applications.
PREREQUISITE: BIL 250 OR BIL 150 AND PERMISSION OF INSTRUCTOR.

BIL553 Concepts in Cell Biology
3 credits Fall Semester
A comprehensive and updated view of biology based on the Cell Theory through infusion of new genetics, pan-genomics, proteomics, photonics, bioinformatics and molecular engineering.
PREREQUISITE: BIL 255 OR GRADUATE STANDING

BIL554 Electron Microscopy
4 credits Fall Semester
Techniques in transmission electron microscopy including tissue preparation, use of the electron microscope, photography, and interpretation of micrographys. Lecture, 1 hour; laboratory, 6 hours.
PREREQUISITE: BIL 255 OR 361 AND PERMISSION OF INSTRUCTOR.
BIL555 Projects in Electron Microscopy
2 credits  Spring Semester
Individual research projects in transmission electron microscopy, 6 hours.
PREREQUISITE: BIL 554. PERMISSION OF INSTRUCTOR.

BIL556 Ecological and Evolutionary Genomics
3 credits  Offered By Announcement Only
PREREQUISITE: BIL 250, BIL 255 OR PERMISSION FROM INSTRUCTOR

BIL557 Evolution and Development
3 credits  Offered By Announcement Only
PREREQUISITE: BIL 250 AND BIL 255

BIL564 Advanced Developmental Biology
3 credits  Offered By Announcement Only
Comprehensive survey of the principles of development and methods of experimental
analysis. Lecture, discussion and demonstration, 3 hours.
PREREQUISITE: BIL 364.

BIL565 Evolution and Development
3 credits  Offered By Announcement Only
The hypothesis and data relating to the biological basis of aging in invertebrates
and vertebrates including humans. Prerequisite: Senior or graduate status in a
biological science.
PREREQUISITE: BIL 250

BIL568 Evolution and Development of Nervous Systems
3 credits  Offered By Announcement Only
Mechanisms/pathways/modules underlying formation of the nervous system during development.
How some properties of nervous systems have resisted change while others have diverged
dramatically during evolution.
PREREQUISITE: BIL 268 OR BIL 355 OR PERMISSION OF INSTRUCTOR

BIL569 Biology of Aging
3 credits  Offered By Announcement Only
The hypotheses and data relating to the biological basis of aging in invertebrates
and vertebrates, including humans.
PREREQUISITE: SENIOR OR GRADUATE STATUS IN A BIOLOGICAL SCIENCE

BIL571 Advanced Special Studies in Biology
1-6 credits  Offered By Announcement Only
Content of course will vary by semester. Content in any semester will be indicated
via subtitle in the class schedule.

BIL572 Advanced Special Studies in Biology
1-6 credits  Offered By Announcement Only
Content of course will vary by semester. Content in any semester will be indicated
via subtitle in the class schedule.

BIL573 Advanced Special Studies in Biology
1-6 credits  Offered By Announcement Only
Content of course will vary by semester. Content in any semester will be indicated
via subtitle in the class schedule.
BIL574 Advanced Special Studies in Biology
1-6 credits  Offered By Announcement Only
Content of course will vary by semester. Content in any semester will be indicated via subtitle in the class schedule.

BIL575 Advanced Special Studies in Biology
1-6 credits  Offered By Announcement Only
Content of course will vary by semester. Content in any semester will be indicated via subtitle in the class schedule.

BIL582 Borderless Science
3 credits  Offered By Announcement Only
Students from various scientific disciplines will be introduced to new technologies and resources from wide-ranging fields of science and learn to apply them in their own fields. Students will engage in mutual exchange of discipline-specific practices and novel ideas for research in biology, neuroscience, psychology, chemistry, physics, mathematics, engineering, etc.
PREREQUISITE: PERMISSION FROM INSTRUCTOR

BIL585 Advanced special topics in biology
3 credits  Offered By Announcement Only
Topics relevant to the biological sciences, co-listed with other departments or programs.
PREREQUISITE: SENIOR OR GRADUATE STUDENT STATUS

BIL586 Advanced Special Topics in Biology
4 credits  Offered By Announcement Only
Topics relevant to the biological sciences, co-listed with other departments or programs.
PREREQUISITE: SENIOR OR GRADUATE STUDENT STATUS

BIL610 Lab Group Meeting
1 credit  Fall Semester
Weekly seminar meeting for discussion of research projects and other academic issues in the research laboratories of graduate faculty in biology.
PREREQUISITE: PERMISSION FROM INSTRUCTOR

BIL611 Lab Group Meeting
2 credits  Spring Semester
PREREQUISITE: PERMISSION OF INSTRUCTOR

BIL612 Graduate Core Module
1 credit  Fall Semester
PREREQUISITE: PERMISSION FROM INSTRUCTOR

BIL613 Graduate Core Module
1 credit  Fall Semester
A two-term sequence of modules that addresses core principles across Biology in a format that is based on and fosters trans-disciplinary thought. Each module is one credit, taught dually by two faculty for 15 hours per module over a period of three weeks, and graded independently of other modules. Five modules are taught sequentially each term, for a total of ten credits for the year. Different modules may take place in different years. Offered in Fall semesters.
PREREQUISITE: PERMISSION OF INSTRUCTOR
BIL614 Professional Writing and Grantsmanship
3 credits
Offered By Announcement Only
Elements of argumentative writing, reader-oriented writing strategies, fundability of submitted grants, and techniques for mastering presentation venues such as posters and talks.
PREREQUISITE: PERMISSION OF INSTRUCTOR

BIL622 Topics in Arthropod Biology
2 credits
Offered By Announcement Only
Areas of current interest will be covered in weekly two-hour seminar-discussions.
PREREQUISITE: BIL 323 OR PERMISSION OF INSTRUCTOR.

BIL623 Birds of the World
4 credits
Offered By Announcement Only
Classification, evolution, distribution, and natural history of the major taxa of birds.
PREREQUISITE: A COURSE IN ORNITHOLOGY OR BACKGROUND IN VERTEBRATE BIOLOGY.

BIL629 Advanced Tropical Botany
8 credits
Offered By Announcement Only
A 7-8 week course on the anatomy, morphology, taxonomy, physiology, evolution and adaptation of tropical plants. Offered on main campus, utilizing the Fairchild Tropical Garden and the United States Plant Introduction Station collections or in Costa Rica under the Organization of Tropical Studies.
PREREQUISITE: APPROVAL OF INSTRUCTORS.

BIL630 Population and Community Ecology: Theory
3 credits
Offered By Announcement Only
Classical and contemporary theory in population and community ecology including population dynamics, matrix models, life tables, predator-prey models and food webs.
PREREQUISITE: CONSENT OF INSTRUCTOR.

BIL631 Population and Community Ecology: Empirical Studies
3 credits
Offered By Announcement Only
Experimental and multivariate approach to the study of the community including the analysis of data sets and the design of field studies.
PREREQUISITE: BIL 630 OR PERMISSION OF INSTRUCTOR.

BIL632 Population and Community Ecology: Theory II
3 credits
Offered By Announcement Only
Classical and contemporary theory in population and community ecology including population dynamics, matrix models, life tables, predator-prey models and food webs.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BIL636 Tropical Biology: An Ecological Approach
8 credits
Offered By Announcement Only
The tropical environment and biota; ecologic relations, communities and evolution in the tropics. Conducted in Costa Rica under the Organization for Tropical Studies. Lecture, laboratory, and fieldwork.
BIL637 Ecología de Poblaciones
7 credits Offered By Announcement Only
PREREQUISITE: ONE SEMESTER OF ECOLOGY OR FIELD BIOLOGY.

BIL638 Tropical Managed Ecosystems
8 credits Offered By Announcement Only
Application of ecological principles to problems in agriculture, forestry, conservation and natural resource management in the tropics. Conducted in Costa Rica under the Organization for Tropical Studies.
PREREQUISITE: ONE SEMESTER OF ECOLOGY OR FIELD BIOLOGY.

BIL641 Hormones and Behavior
2 credits Offered By Announcement Only
Mediation of specific behaviors by hormones and other chemical messengers.
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

BIL649 Seminar in Behavior
1 credit Fall & Spring Semester

BIL651 Genomes
3 credits Offered By Announcement Only
Genome organization and evolution in various cell types. Structure, organization, and evolution, including sex chromosomes.
PREREQUISITE: ONE UNDERGRADUATE GENERAL GENETICS COURSE FOR SCIENCE MAJORS.

BIL652 Seminar in Population Genetics
1- 2 credits Offered By Announcement Only
Discussion of current literature in Population Genetics. This course may be repeated for credit.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BIL653 Seminar in Cell Biology
1 credit Offered By Announcement Only

BIL655 Techniques in Scanning Electron Microscopy
3 credits Offered By Announcement Only
Tissue preparation, use of the scanning electron microscope, photography, and analysis and manipulation of digital images. Lecture 1 hour; laboratory 5 hours.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BIL664 Seminar in Developmental Biology
1 credit Offered By Announcement Only

BIL671 Advanced Study in Plant or Animal Sciences
1- 6 credits Fall & Spring Semester & First & Second Summer Session
Content of course will vary by semester. Content in any semester will be expressed in parenthesis following title "Advanced Study" in the printed class schedule.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
BIL672 Advanced Study in Plant or Animal Sciences
1-6 credits  Fall & Spring Semester & First & Second Summer Session
Content of course will vary by semester. Content in any semester will be expressed in parenthesis following title "Advanced Study" in the printed class schedule.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BIL673 Advanced Study in Plant or Animal Sciences
1-6 credits  Fall & Spring Semester & First & Second Summer Session
Content of course will vary by semester. Content in any semester will be expressed in parenthesis following title "Advanced Study" in the printed class schedule.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BIL674 Advanced Study in Plant or Animal Sciences
1-6 credits  Fall & Spring Semester & First & Second Summer Session
Content of course will vary by semester. Content in any semester will be expressed in parenthesis following title "Advanced Study" in the printed class schedule.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BIL675 Advanced Study in Plant or Animal Sciences
1-6 credits  Fall & Spring Semester & First & Second Summer Session
Content of course will vary by semester. Content in any semester will be expressed in parenthesis following title "Advanced Study" in the printed class schedule.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BIL676 Current Topics in Biological Research
1-2 credits  Fall & Spring Semester & First & Second Summer Session
Content will vary by semester. Readings and discussions with eminent scholars temporarily resident in the department's Distinguished Visiting Professor program.

BIL678 Current Topics in Biological Research
1 credit  Fall & Spring Semester & First & Second Summer Session
Content will vary by semester. Readings and discussions with eminent scholars temporarily resident in the department's Distinguished Visiting Professor program.

BIL680 Research Ethics
0 credit  Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR

BIL681 Ecologia da Floresta Amazonica
4 credits  Offered By Announcement Only
One-month field course focusing on the ecological characteristics of the tropical forests of Brazil. An Organization for Tropical Studies course conducted near Manaus, Brazil, and offered to students fluent in Portuguese. Offered annually.
PREREQUISITE: GRADUATE STANDING; FLUENCY IN PORTUGUESE.

BIL682 Ecosistemas Amazonicas
4 credits  Offered By Announcement Only
Intensive one-month field course focusing on the unique ecological characteristics of the flooded and upland forests of the Amazon region of Peru. Conducted in Peru for Spanish-speaking students by the Organization for Tropical Studies.
PREREQUISITE: GRADUATE STANDING; FLUENCY IN SPANISH.
BIL684 Ecologia de Ecosistemas Costeros Tropicales
6 credits  Offered By Announcement Only
Six week Field course introducing the ecology and management of tropical coastal ecosystems of the Gulf of Mexico. Course offered in Spanish in Mexico by the Organization for Tropical Studies.
PREREQUISITE: GRADUATE STANDING; FLUENCY IN SPANISH.

BIL691 Biology Seminar
0 credit  Fall & Spring Semester
Research seminars by distinguished biologists.

BIL710 Master’s Thesis
1-6 credits  Fall & Spring Semester & First & Second Summer Session
The student working on his/her master’s thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

BIL720 Research in Residence
0 credit  Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master’s degree after the student has enrolled for the permissible cumulative total in BIL 710 (usually six credits). Credit not granted. May be regarded as full time residence.

BIL730 Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor, but not for less than a total of 12. Not more than 12 hours of BIL 730 may be taken in a regular semester, nor more than six in a summer session.

BIL740 Post-Candidacy Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. who have advanced to candidacy. The student will enroll for credit as determined by his/her advisor, but not for less than a total of 12. Not more than 12 hours of BIL 740 may be taken in a regular semester, nor more than six in a summer session.
PREREQUISITE: PH.D CANDIDATE STATUS

BIL750 Research in Residence
0 credit  Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

CHEMISTRY
CHM510 Enzyme Kinetics and Mechanism
3 credits  Fall & Spring Semester
Detailed coverage of chemistry of enzyme-catalyzed reactions.
PREREQUISITE: CHM 201 AND CHM 202
CHM515 Makings of a Scientist
3 credits  Offered By Announcement Only
By analyzing achievements and advice of few successful scientists, chemists in particular will highlight what qualities are needed to be a successful scientist. Importance of motivation, perseverance, communication skills, adhering to ethical guidelines and ability to deal with colleagues and co-workers will be brought out. Career options available for a trained chemist and how different each one is will be pointed out. Overall this is a course in multi-mentoring of graduate students who are aiming for a career in science and hope to be successful researchers in science, particularly in chemistry.
PREREQUISITE: REGISTERED GRADUATE STUDENTS OR UNDERGRADUATES IN THEIR SENIOR YEAR

CHM520 Physical Organic Chemistry
3 credits  Fall Semester
Aspects of chemical bonding, acids and bases, stereochemistry, aromaticity, pericyclic reactions, linear free energy relationships, transition state theory, excited state chemistry, reactive intermediaries, mechanisms of uni- and bimolecular reactions.
PREREQUISITE: CHM 202 AND 360.

CHM521 Polimer Chemistry
3 credits  Offered By Announcement Only
Fundamental concepts in polymer chemistry. Course will cover the terminology and chemistry of polymers and polymerizations. Students will be required to synthesize several different types of polymers. This will reinforce concepts learned during lecture and give students hands-on experience.
PREREQUISITE: CHM 201 AND CHM 202

CHM522 Synthetic Organic Chemistry
3 credits  Fall Semester
Functional group transformations, Synthon approach. Retrosynthetic analyses, multistep syntheses.

CHM523 Contemporary Total Synthesis
3 credits  Spring Semester
New methods strategies and perspectives for the total synthesis based on the modern literature.
PREREQUISITE: CHM 201, CHM 202, AND CHM 522

CHM524 Supramolecular Chemistry
3 credits  Offered By Announcement Only
Complexation, recognition, and catalysis as applied to bioorganic chemistry. Steric, polar, and lipophilic interactions as well as proximity effects in the design of synthetic enzyme mimics, cationic transport species, etc.
PREREQUISITE: CHM 365 AND 520.

CHM525 Structural Organic Chemistry
3 credits  Spring Semester
CHM530 Fluorescence Spectroscopy and Microscopy
3 credits  Fall & Spring Semester
The photo physical properties of organic compounds that illustrates the fundamental
principles of fluorescence. It also explains how fluorescence spectra and images
can be recorded and how these powerful analytical techniques can be used to address
significant problems in biology and medicine.
PREREQUISITE: CHM 304 AND CHM 360

CHM535 Molecular and Supramolecular Photochemistry
3 credits  Offered By Announcement Only
Generation of a model that will help rationalize/predict excited state reactions.
A brief background on physical aspects of photochemistry will be given. Exploring
and understanding of reactions that are triggered by light. Importance of light
in life will be highlighted.
PREREQUISITE: CHM 201 AND CHM 202

CHM541 Principles of Bonding and Reactivity in Inorganic Chemistry
3 credits  Fall Semester
Bonding principles necessary to understand the structure, stability, and fundamental
reactivity of main group and transition metal inorganic compounds.
PREREQUISITE: CHM 365

CHM553 Modern Quantum Chemistry
3 credits  Offered By Announcement Only
Many-electron wave functions and operators. Hartee-Fock approximation, density
functional theory, configuration interaction, and many-body perturbation theory.
PREREQUISITE: CHM 365

CHM555 Modern Statistical Mechanics
3 credits  Offered By Announcement Only
The statistical foundation of thermodynamics; ensemble averages and fluctuations;
partition functions for ideal and non-ideal systems; Monte Carlo methods, classical
fluids, and nonequilibrium statistical mechanics.
PREREQUISITE: ONE SEMESTER OF PHYSICS, MTH 112 OR 132, CHM 360, OR PERMISSION OF
INSTRUCTOR; COREQUISITE(S): CHM 365

CHM556 Self-Assembly and Surface Chemistry
3 credits  Offered By Announcement Only
Methods of preparation of self-assembly monolayers and surface chemistry properties.
PREREQUISITE: CHM 365.

CHM563 Electronic Structure Methods
3 credits  Fall Semester
Basis sets, post-SCF methods, and potential energy surfaces. Thermodynamic, structural,
and vibrational predictions, excited states, solvation and hybrid Hamiltonians.
PREREQUISITE: CHM 365

CHM564 Molecular Simulations
1 credit  Offered By Announcement Only
Classical dynamics, force-fields, sampling, periodic and stochastic boundaries,
Monte-Carlo and molecular dynamics simulations, and free energy perturbation.
PREREQUISITE: PERMISSION OF DEPARTMENT.
CHM565 Principles of Spectroscopic Techniques
3 credits Offered By Announcement Only
Spectroscopic techniques: nuclear magnetic resonance (NMR), mass spectra (MS), ultraviolet (UV), visible infrared (IR), fluorescence, and other specialized spectroscopic techniques.
PREREQUISITE: CHM 365.

CHM570 Advanced Physical Chemistry Topics
3 credits Offered By Announcement Only
PREREQUISITE: CHM 365.

CHM575 Principles of Nuclear Magnetic Resonance and Multidimensional Spectroscopy
3 credits Offered By Announcement Only
Theory of nuclear magnetic resonance; Bloch equations; relaxation theory; time-domain versus frequency domain spectroscopies, and principles of multidimensional spectroscopy.
PREREQUISITE: ONE SEMESTER OF PHYSICS, MTH 112 OR 132, CHM 304, OR PERMISSION OF INSTRUCTOR. COREQUISITE(S): CHM 360

CHM579 Special Topics: Chemistry Internship
1-3 credits Offered By Announcement Only

CHM580 Special Topics: Chemistry Internship
1-3 credits Offered By Announcement Only

CHM591 Topics in Chemistry
1-3 credits Offered By Announcement Only
Subject matter offerings based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule following the title, "Topics in Chemistry".
PREREQUISITE: 20 CREDITS IN CHEMISTRY.

CHM592 Topics in Chemistry
1-3 credits Offered By Announcement Only
Subject matter offerings based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule following the title, "Topics in Chemistry."
PREREQUISITE: 20 CREDITS IN CHEMISTRY.

CHM593 Readings in Chemistry
1-3 credits Offered By Announcement Only
Supervised readings on special topics. Offered by special arrangement. May be repeated for credit.
PREREQUISITE: 20 CREDITS IN CHEMISTRY AND PERMISSION OF THE DEPARTMENT CHAIRMAN.

CHM594 Readings in Chemistry
1-3 credits Offered By Announcement Only
Supervised readings on special topics. Offered by special arrangement. May be repeated for credit.
PREREQUISITE: 20 CREDITS IN CHEMISTRY AND PERMISSION OF THE DEPARTMENT CHAIRMAN.

CHM603 Structure and Reactivity of Inorganic Compounds
3 credits Offered By Announcement Only
Current theories of bonding, stereochemistry, and reaction mechanisms as applied to the structures and reactions of inorganic compounds.
CHM604 Coordination Chemistry  
2 credits  
Fall Semester  
Bonding Theory, vibrational and electron spectra of coordination compounds; enumeration, recognition, and spectra of isomers.

CHM626 Advanced Organic Topics  
1- 3 credits  
Offered By Announcement Only  
Special topics in organic chemistry.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CHM640 Introduction to Crystallography  
1 credit  
Offered By Announcement Only  
Crystals, Crystal Systems, 2-d and 3-d Space Groups and Diffraction (5h)  
Diffraction Principles (3h)  
Structure solution (direct and Patterson methods) and refinement (3h)  
Hands-on experiences: SMART 1000 CCD operation and SHELXTL calculation (4h)  

CHM641 Inorganic Reaction Mechanism  
3 credits  
Offered By Announcement Only  
Substitution reactions  
Electron transfer reactions  
Reaction of coordinated ligands  
Stereochemical Change.

CHM646 Organometallics  
3 credits  
Offered By Announcement Only  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CHM647 Advanced Inorganic Topics  
1- 3 credits  
Offered By Announcement Only  
Selected topics in inorganic chemistry.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CHM649 Advanced Inorganic Topics  
2- 3 credits  
Offered By Announcement Only  
Study of selected topics in inorganic chemistry.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CHM650 Chemical Thermodynamics  
1 credit  
Offered By Announcement Only  
Thermodynamic equations from basic laws and definitions, and their applications to chemical problems.  
PREREQUISITE: PERMISSION OF DEPARTMENT.

CHM651 Optical Spectroscopy  
1 credit  
Offered By Announcement Only  
Techniques in Ultraviolet, Visible, and Infrared Spectrosopies. Fluorescence Measurements.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CHM652 Chemical Kinetics  
1 credit  
Offered By Announcement Only  
Rate laws and rate constants, integrated rate law mechanisms and reaction rates, transition state theory methods for conventional and fast kinetic determinations.
CHM655 Electrochemistry
3 credits Offered By Announcement Only
Modern electrochemical techniques including voltammetry, chronocoulometry, rotating disk electrode, and ultramicroelectrodes.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CHM665 Physical Supramolecular Chemistry
3 credits Offered By Announcement Only
Intramolecular host-guest complex formation; characterization of supramolecular assemblies.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CHM670 Advanced Physical Chemistry Topics
1-3 credits Offered By Announcement Only
Special topics in advanced physical chemistry.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CHM679 Chemistry Seminar
1 credit Fall & Spring Semester
Participation in the departmental seminar program. Required each semester the student is in residence and not enrolled in CHM 680 (excluding summer sessions).

CHM680 Chemistry Seminar
1 credit Fall & Spring Semester
Participation in the chemistry department seminar program, including an oral presentation of special topics.

CHM685 Introduction to Research
2 credits Offered By Announcement Only
Research principles and practices, independent study in selected subject areas, and/or oral presentation of a proposed research topic. Open only to graduate students working toward the M.S. or Ph.D. in chemistry.
PREREQUISITE: PERMISSION OF DEPARTMENT.

CHM688 Problems in Research Planning
2 credits Offered By Announcement Only
Formulation of a research program for investigating an original problem not related to the candidate's major laboratory research. A brief written summary and an oral defense of the plan will be required.
PREREQUISITE: AT LEAST 10 CREDITS OF RESEARCH AND SUCCESSFUL COMPLETION OF THE EVALUATION EXAMINATIONS.

CHM693 Directed Readings in Chemistry
1-3 credits Offered By Announcement Only

CHM694 Directed Readings in Chemistry
1-3 credits Offered By Announcement Only

CHM705 Research Practices
1-3 credits Fall & Spring Semester
Research experiences in special techniques. For students electing the non-thesis M.S. option. May be repeated for a total not to exceed six credits.
University of Miami Bulletin, 2012-2013
Graduate Course Listing
COLLEGE OF ARTS AND SCIENCES
CHEMISTRY

CHM710 Master's Thesis
1-6 credits Fall & Spring Semester & First & Second Summer Session
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

CHM715 Post-candidacy thesis.
1-6 credits Fall & Spring Semester & First & Second Summer Session
For students seeking the MS Degree. Credit is not awarded until the thesis has been accepted.

CHM720 Research in Residence
0 credit Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in CHM 710 (usually six credits). Credit not granted. May be regarded as full time residence.

CHM730 Doctoral Dissertation
1-12 credits Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor, but for not less than a total of 12 hours. Up to 12 hours may be taken in a regular semester, but not more than six in a summer session.

CHM740 Post-candidacy Dissertation
1-12 credits Fall & Spring Semester & First & Second Summer Session

CHM750 Research in Residence
0 credit Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D. and D.A., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

CHM751 Research in Residence
0 credit Fall Semester

CLASSICS
CLA505 Seminar in Ancient Studies
3 credits Fall & Spring Semester & First & Second Summer Session
Topics in Greek and Roman studies.
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR.

COMPUTER SCIENCE
CSC506 Logic
3 credits Offered By Announcement Only
PREREQUISITE: MTH 230 OR 309 OR PERMISSION OF THE INSTRUCTOR.

CSC507 Data Security and Cryptography
3 credits Offered By Announcement Only
PREREQUISITE: (CSC 517 OR 527)
CSC517 Data Structures and Algorithm Analysis
3 credits  Fall & Spring Semester
Distributed algorithms. Cryptographic algorithms. Geometric algorithms.
PREREQUISITE: MTH 309, AND CSC 220.

CSC518 Interpreters and Compiler Theory
3 credits  Offered By Announcement Only
Translation of higher-level languages into machine language. Grammars, parsing,
scanners, precedence relations. Run-time storage and symbol table organization.
implementation.
PREREQUISITE: CSC 519.

CSC519 Program Languages
3 credits  Fall Semester
Models of execution control. Declaration, modularity, and storage management. Programming
language semantics. Programming paradigms.
PREREQUISITE: CSC 517.

CSC521 Principles of Computer Operating Systems
3 credits  Fall Semester
Process management. Scheduling and dispatch. Interprocess communication. Memory
for UNIX.
PREREQUISITE: (CSC 314 OR 350), (CSC 322 OR PERMISSION OF INSTRUCTOR).

CSC523 Database Systems
3 credits  Fall Semester
Information models and systems. Database systems. Data modeling. Relational databases.
Relational database design. Database query languages. Database Mining concepts,
Web database programming.
PREREQUISITE: CSC 517.

CSC524 Computer Networks
3 credits  Spring Semester
Computer networks and network applications. The protocol stack. Routing, switching
and bridging technologies. Models of network computing. Internet standards and
protocols.
PREREQUISITE: (CSC 314 OR 350), (CSC 322 OR PERMISSION OF INSTRUCTOR).

CSC527 Theory of Computing
3 credits  Spring Semester
Sets, relations, and languages. Automata theory. Basic computability theory. Turing
machines. The complexity classes P and NP.
PREREQUISITE: CSC 220, MTH 309

CSC528 Introduction to Parallel Computing
3 credits  Offered By Announcement Only
Parallel computing systems shared-memory parallel programming, with open MP, distributed-memory
parallel programming, software with open MPI software package. Applications: vector
and matrix operations, sorting, image processing.
PREREQUISITE: CSC 517
CSC529 Introduction to Computer Graphics

3 credits

Offered By Announcement Only


PREREQUISITE: CSC 220, MTH 210

CSC531 Introduction to Software Engineering

3 credits

Spring Semester


PREREQUISITE: CSC 322 OR 517.

CSC540 Algorithm Design and Analysis

3 credits

Offered By Announcement Only

Design techniques include divide-and-conquer, greedy method, dynamic programming, backtracking. Time and space complexity. Sorting, searching, combinatorial and graph algorithms.

PREREQUISITE: CSC 517.

CSC545 Introduction to Artificial Intelligence

3 credits

Offered By Announcement Only


PREREQUISITE: CSC 220 AND MTH 309.

CSC547 Computational Geometry

3 credits

Offered By Announcement Only

Algorithms for solving geometric problems arising from application domains including graphics, robotics, and GIS.

PREREQUISITE: CSC 517

CSC548 Bioinformatics Algorithms

3 credits

Fall Semester


PREREQUISITE: (CSC120 OR CSC210) AND (BIL150 OR BIL104 OR BIL352 OR BIL552 OR CSC 552)

CSC552 Bioinformatics Tools

3 credits

Fall Semester

Databases and tools of bioinformatics, as relevant to research in genomics and molecular biology. Bioinformatics applications. Information retrieval, analytical tools, BLAST searches, promoter analysis, and protein structure-function analysis, and various applications.

PREREQUISITE: BIL 250 OR (BIL 150 AND PERMISSION OF INSTRUCTOR)

CSC555 Multimedia Systems

3 credits

Offered By Announcement Only


PREREQUISITE: CSC 517.
CSC595 Topics in Computer Science
1-3 credits   Offered By Announcement Only

CSC596 Topics in Computer Science
1-3 credits   Offered By Announcement Only

CSC597 Topics in Computer Science
1-3 credits   Offered By Announcement Only

CSC598 Topics in Computer Science
1-3 credits   Offered By Announcement Only

CSC599 Topics in Computer Science
1-3 credits   Offered By Announcement Only

CSC606 Logic Programming
3 credits   Offered By Announcement Only
Programming in Prolog, Fix-point semantics, Declarative semantics, Completeness of SLD-resolution, Negation, Implementation of logic programming languages. Deductive databases.
PREREQUISITE: MTH 506 AND CSC 517.

CSC609 Data Security and Cryptography
3 credits   Offered By Announcement Only
PREREQUISITE: CSC 517 OR 527.

CSC612 Complexity Theory
3 credits   Offered By Announcement Only
Models of computations, Blum's axioms, intractability, NP-completeness.
PREREQUISITE: CSC 527.

CSC623 Theory of Relational Databases
3 credits   Offered By Announcement Only
PREREQUISITE: CSC 523.

CSC624 Mobile Wireless Systems
3 credits   Offered By Announcement Only
Cellular Systems, multiple access techniques, wireless networking, mobile IP, power management, user location information management, TDMA, CDMA, and GSM systems, data broadcasting.
PREREQUISITE: CSC 524.

CSC628 Parallel Algorithms
3 credits   Fall Semester
Parallel computation models; sorting networks; parallel algorithms for sorting, searching, graph problems, prefix computation, pattern matching, and fast Fourier transforms; theory of P-completeness, the class NC.
PREREQUISITE: CSC 517.
CSC645 Introduction to Expert Systems
3 credits
Offered By Announcement Only
Overview of expert systems, architecture of expert systems, knowledge base and representation, inference engine, expert system tools, reasoning under uncertainty, explaining the reasoning, evaluation of expert systems.
PREREQUISITE: CSC 545.

CSC646 Neural Computing
3 credits
Offered By Announcement Only
PREREQUISITE: CSC 517.

CSC647 Computational Geometry
3 credits
Offered By Announcement Only
Algorithms for solving geometric problems arising from application domains including graphics, robotics, and GIS.
PREREQUISITE: CSC 517.

CSC648 Automated Reasoning
3 credits
Offered By Announcement Only
PREREQUISITE: CSC 517 OR 545.

CSC655 Advanced Multimedia Systems
3 credits
Offered By Announcement Only
PREREQUISITE: CSC 555.

CSC670 Directed Reading
2-4 credits
Fall & Spring Semester

CSC685 Topics in Computer Science
1-3 credits
Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CSC686 Topics in Computer Science
1-3 credits
Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CSC687 Topics in Computer Science
1-3 credits
Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CSC688 Topics in Computer Science
1-3 credits
Offered By Announcement Only

CSC689 Topics in Computer Science
1-3 credits
Offered By Announcement Only
CSC692 Seminar
  1-2 credits   Offered By Announcement Only

CSC693 RESEARCH PROJECT
  1-6 credits   Fall & Spring Semester
  Supervised research project preceding dissertation research for the Ph.D.

CSC694 Research Project
  1-6 credits   Fall & Spring Semester
  Supervised research project preceding dissertation research for the Ph.D.

CSC710 Master's Thesis
  1-6 credits   Fall & Spring Semester
  The student working on his/her master's thesis enrolls for the number of credits
as determined by his/her advisor. Credit is not awarded until the thesis has been
accepted.

CSC725 Continuous Registration--Master's Study
  0 credits   Fall & Spring Semester
  To establish residence for non-thesis master's students who are preparing for major
examinations. Credit not granted. Regarded as full time residence.

CSC730 Pre-Candidacy DOCTORAL DISSERTATION
  1-12 credits   Fall & Spring Semester & First & Second Summer Session
  Required of all candidates for the Ph.D. The student will enroll for credit as
determined by his/her advisor, but for not less than a total of 12 hours. Up to 12
hours may be taken in a regular semester, but not more than six in a summer session.

CSC740 Post-Candidacy Doctoral Dissertation
  1-12 credits   Spring Semester
  Required of all candidates for the Ph.D. who have advanced to candidacy. The student
will enroll for credit as determined by his/her advisor, but not for less than
a total of 12. Not more than 12 hours of CSC 740 may be taken in a regular semester,
nor more than six in a summer session.

CSC750 RESEARCH IN RESIDENCE
  0 credit   Fall & Spring Semester & First & Second Summer Session
  Used to establish research in residence for Ph.D. students after the student has
enrolled for permissible cumulative total in appropriate doctoral research. Regarded
as full-time residence.

ECOSYSTEM SCIENCE & POLICY

ECS501 Interdisciplinary Environmental Theory
  3 credits   Fall Semester
  Theoretical approaches in environmental and social science fields, including conservation
biology, ecology, geography, economics, sociology, anthropology, philosophy, and
interdisciplinary approaches. Themes include human ecology, historical ecology,
landscape ecology, environmental law and ethics, perception of risk and uncertainty,
vulnerability and adaptation, and environmental valuation.
PREREQUISITE: SENIOR OR GRADUATE STANDING IN ECS
ECS503 Interdisciplinary Environmental Methods
3 credits Fall Semester
Environmental methods related to core programmatic themes of Urban Ecology, Global Public Health, Climate and Society, Environment and the Media, Integrated Marine and Terrestrial Management, and Regulatory Regimes. The course focuses on the application of Interdisciplinary approaches and methods for addressing complex environmental problems. Students will learn to design and employ interdisciplinary approaches, using qualitative and quantitative methods and analysis, through lectures, reading assignments, discussion sessions, and assignments.
PREREQUISITE: SENIOR OR GRADUATE STANDING IN ECS

ECS507 Interdisciplinary Environmental Decision Analysis
3 credits Fall Semester
Approaches to studying and interpreting human behavior related to a range of decision making at the level of individual, group, and firm. Multidisciplinary theories and methods informing work in the decision sciences will be covered from fields of psychology, business, economic, political science, and anthropology.
PREREQUISITE: SENIOR OR GRADUATE STANDING IN ECS.

ECS572 Special Topics in ECS
0-3 credits Fall & Spring Semester & First & Second Summer Session
Content varies by semester and is indicated in parentheses following course number and title in class schedule.
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR

ECS580 Field Studies
1-4 credits Offered By Announcement Only
This course will provide participants with the opportunity for intensive field research geared toward an interdisciplinary understanding of environmental issues and conservation concerns.
PREREQUISITE: ADVANCED UNDERGRADUATE STANDING OR PERMISSION OF INSTRUCTOR

ECS605 Interdisciplinary Environmental Law & Policy
3 credits Fall & Spring Semester
Analysis of science-based environmental decision-making and policy implementation at the federal and state levels in the United States, with comparative international perspectives, and an introduction to international institutions that fashion and carry out environmental policy. Case studies will cover authorization, appropriations and over-sight functions of Congress and state legislatures; the role of the executive, federal and state, in initiating and implementing statutes by regulation and other means; and the role of negotiation, litigation, mediation and consensus-building in resolving disputes and advancing or thwarting environmental policy.
PREREQUISITE: GRADUATE STANDING IN ECS

ECS608 Interdisciplinary ECS Seminar
2 credits Fall Semester
Seminar centering on research and case studies illustrating cutting edge human-environment research, and including both qualitative and quantitative methods. Intensive reading and writing related to relevant topics in the field.
PREREQUISITE: GRADUATE STANDING
ECS625 Problems in Environmental Science and Policy
1-6 credits  Fall & Spring Semester & First & Second Summer Session
Content and prerequisites announced when offered. Course may be repeated for credit if content varies.
PREREQUISITE: GRADUATE STUDENT IN ECS

ECS690 Directed Readings
1-3 credits    Fall & Spring Semester
PREREQUISITE: PERMISSION OF INSTRUCTOR

ECS730 Doctoral Dissertation
1-12 credits    Fall Semester
Required for all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor but not for less than a total of 12 credits. Not more than 12 hours of ECS 730 may be taken in a regular semester, nor more than six in a summer session. Where a student has passed his/her (a) qualifying examinations, and (b) is engaged in an assistantship, he/she may still take the maximum allowable credit stated above.

ECS750 Research in Residence
0 credit    Fall Semester
Used to establish research in residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. May be regarded as full-time residence as determined by the Dean of the Graduate School.

ENGLISH
ENG504 Form in Poetry
3 credits    Offered By Announcement Only
Poetic works as literary objects, with attention to poetic trends and the creative process.
PREREQUISITE: PERMISSION OF INSTRUCTOR. SIX CREDITS IN LITERATURE OR GRADUATE STANDING.

ENG505 Form in Fiction
3 credits    Offered By Announcement Only
Fictional works as literary objects with attention to individual styles, Fictional Trends and the creative process.
PREREQUISITE: GRADUATE STUDENTS: PERMISSION OF INSTRUCTOR. UNDERGRADUATES: SIX CREDITS IN LITERATURE AND PERMISSION OF INSTRUCTOR.

ENG560 Creative Writing: Fiction I
3 credits    Offered By Announcement Only
Advanced work in the writing of fiction.
PREREQUISITE: PERMISSION OF INSTRUCTOR AND, FOR UNDERGRADUATE, SIX CREDITS IN ENGLISH AT THE 200 LEVEL OR ABOVE

ENG561 Creative Writing: Fiction II
3 credits    Offered By Announcement Only
Advanced work for students displaying superior ability for prose fiction writing. Admission by recommendation or demonstration of skills.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
ENG562 Creative Writing: Poetry
3 credits Offered By Announcement Only
Advanced work in the writing of poetry.
PREREQUISITE: AT LEAST SIX CREDITS IN ENGLISH AT THE 200 LEVEL OR ABOVE OR GRADUATE STANDING.

ENG591 Graduate Practicum I: Teaching College Writing
0 credit Fall Semester
Methods and problems in teaching English composition and college writing.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG592 Graduate Practicum II: Teaching College Literature
0 credit Spring Semester
Methods and problems in teaching introductory literature courses.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG595 Special Topics
3 credits Offered By Announcement Only
PREREQUISITE: FOR UNDERGRADUATES, SIX CREDITS IN LITERATURE OR PERMISSION OF INSTRUCTOR; FOR GRADUATE STUDENTS, PERMISSION OF DIRECTOR OF GRADUATE STUDIES.

ENG601 Creative Writing: Fiction III
3-6 credits Offered By Announcement Only
Advanced M.F.A. workshop in the techniques of writing fiction.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF INSTRUCTOR.

ENG602 Creative Writing: Poetry II
3-6 credits Offered By Announcement Only
Advanced M.F.A. workshop in the techniques of writing poetry.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF INSTRUCTOR.

ENG610 Studies in Old English Language and Literature
3 credits Offered By Announcement Only
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG611 Beowulf
3 credits Offered By Announcement Only
In-class analysis and translation of Beowulf; consideration of text-related problems such as paleography, editing, emendation, and translation.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG615 Studies in Chaucer
3 credits Offered By Announcement Only
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG616 Studies in Middle English Language and Literature
3 credits Offered By Announcement Only
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG620 Studies in Shakespeare
3 credits Offered By Announcement Only
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.
ENG621 Studies in Elizabethan and Jacobean Drama
3 credits Offered By Announcement Only
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG622 Studies in 16th Century Literature
3 credits Offered By Announcement Only
A survey of predominantly non-dramatic Renaissance literature, with an emphasis on the Sixteenth Century.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG623 Studies in Spenser
3 credits Offered By Announcement Only
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG624 Studies in 17th Century Literature
3 credits Offered By Announcement Only
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG625 Studies in Milton
3 credits Offered By Announcement Only
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG630 Restoration and 18th-Century Drama
3 credits Offered By Announcement Only
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG631 Studies in Restoration and 18th Century Literature
3 credits Offered By Announcement Only
Special topics in British Literature from 1660-1800.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG633 The Eighteenth-Century British Novel
3 credits Offered By Announcement Only
Survey of the British novel from Defoe to Austen.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF GRADUATE DIRECTOR.

ENG640 Studies in Romanticism
3 credits Offered By Announcement Only
A study of writers and genres between the late eighteenth and the mid-nineteenth century, through an investigation of questions of canonicity, epistemological orientation, colonialism, and the revolutionary context.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG645 Studies in Victorian Poetry and Prose
3 credits Offered By Announcement Only
Victorian poetry and prose exclusive of the novel. Poems by Tennyson, Browning, Arnold, Rossetti, and others. Prose works by writers such as Carlyle, Newman, Mill, Ruskin, and Pater.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG646 Nineteenth-Century British Novel
3 credits Offered By Announcement Only
Survey of the British novel from Austen to Conrad.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.
ENG648 Studies in the Novel
3 credits
Topics in eighteenth-, nineteenth-, and twentieth-century fiction.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG650 Studies in Modern British Literature
3 credits
Intensive coverage of a limited topic in twentieth-century British or Irish literature.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG651 Studies in Joyce
3 credits
Close readings of Dubliners, A Portrait of the Artist as a Young Man, Ulysses, and Finnegans Wake; extensive review of Joyce criticism.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG652 Studies in Irish Literature
3 credits
Intensive coverage of a selected topic in Irish Literature.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG654 Contemporary British Literature
3 credits
Studies in British prose, poetry, and drama since 1939.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG655 Contemporary American Poetry and Poetics
3 credits
Poetry and poetics from 1945 to present, focusing on Black Mountain Poetics, the New York School, the Black Arts Movement, Language Poetry and more recent writers and movements.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG658 Studies in Transatlantic Literature
3 credits
Literature on transatlantic themes and/or by transatlantic writers. Border crossing; ships; sailors; and other travelers; movement of people, things, and ideas in the Atlantic world.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG660 Studies in American Literature: Beginnings to 1800
3 credits
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG661 Studies in American Literature: 1800–1865
3 credits
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG662 Studies in American Literature: 1865–1914
3 credits
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG663 Studies in American Literature: 1914 to 1950
3 credits
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.
ENG664 Studies in American Literature: 1950 to the present
3 credits Offered By Announcement Only
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG665 Studies in African-American Literature
3 credits Offered By Announcement Only
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG666 Caribbean Literature
3 credits Offered By Announcement Only
Caribbean literature and cultural theory; Caribbean aesthetic.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG667 Caribbean Popular Culture
3 credits Offered By Announcement Only
Special topics on the relations among politics, popular culture, and literature in the Caribbean region.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG668 Studies in Race and Diasporic Literatures
3 credits Offered By Announcement Only
Analysis of race, ethnicity, immigration, and transnationalism in literature and cultural theory.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG669 Studies in Women’s Literature
3 credits Offered By Announcement Only
Topic varies by semester. Analysis of gender issues and literary production by women.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG670 The Classical Tradition and English Literature
3 credits Offered By Announcement Only
A study of classical authors such as Homer, Aeschylus, Sophocles, Euripides, Virgil, Ovid, Horace, and Catullus, who have been seminal for English writers from the Middle Ages to the present.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG672 Comparative Studies in Renaissance and Baroque Literature
3 credits Offered By Announcement Only
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG673 Eighteenth-Century European Literature
3 credits Offered By Announcement Only
Major literary and aesthetic works of the European Enlightenment.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG674 The Romantic Movement in Europe
3 credits Offered By Announcement Only
A study of the forces and influences of the Romantic Movement in Europe as these intersect English Romanticism.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.
ENG675 European Novel
3 credits  Offered By Announcement Only
Major authors and trends in the development of the European novel as a unified literary tradition.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG677 Studies in Modern Literature
3 credits  Offered By Announcement Only
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG678 Studies in Contemporary Literature
3 credits  Offered By Announcement Only
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG680 History of Literary Criticism
3 credits  Offered By Announcement Only
A survey of literary criticism and theory from the ancient Greeks to the early twentieth century.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG681 Introduction to Literary Theory
3 credits  Offered By Announcement Only
Twentieth-century literary theory beginning with the New Criticism and including topics such as semiotics, hermeneutics, deconstruction, feminism, and neopragmatism.

ENG682 Contemporary Criticism and Theory
3 credits  Offered By Announcement Only
Topics in recent criticism and theory.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG683 Literature and Psychoanalysis
3 credits  Offered By Announcement Only
The interrelations between literary theory, textual analysis, and psychoanalytic theory.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG684 Theory of Narrative
3 credits  Offered By Announcement Only
Analysis of narrative theories, ancient to contemporary.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG685 Feminist Theory
3 credits  Offered By Announcement Only
Feminist writing and criticism from the nineteenth century to the present. Supplementary readings in anthropological, psychoanalytic, and socio-political criticism, as well as in theories of poetic tradition and the poetic process.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG686 Theories of Gender and Sexuality
3 credits  Offered By Announcement Only
Queer theory and its relationship with gender studies, critical race studies, and emerging directions in the field.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.
ENG687 Studies in Literature and Culture since 1950
3 credits Offered By Announcement Only
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG688 Studies in Latino/a Literatures and Cultures
3 credits Offered By Announcement Only
Comparative and interdisciplinary approaches to art, film, music and literature.
Topics may include: borderlands, postcolonial and "Americas" methodologies; ethnicity, race and mestizage; immigration and the "Latinization" of the U.S.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG689 Comparative Americas Studies
3 credits Offered By Announcement Only
Comparative, interdisciplinary and transnational approaches to literatures and cultures of the Americas.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG691 Rhetorical Traditions
3 credits Offered By Announcement Only
Rhetorical traditions from antiquity to the nineteenth century in light of recent scholarship, with special emphasis on the use of rhetoric in education.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG692 Modern Rhetorical Theory
3 credits Offered By Announcement Only
A study of rhetorical theory in the twentieth century, concentrating on the epistemological and ideological essence of discourse.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG693 Teaching College Composition
3 credits Fall Semester
Rhetorical and literary theory related to composition instruction. Designed primarily for Teaching Assistants in the English Department, but open to all students planning to teach writing.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG695 Special Topics
3 credits Offered By Announcement Only
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG696 Directed Readings
1- 3 credits Fall & Spring Semester
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG697 Readings for the Qualifying Examination
1- 3 credits Fall & Spring Semester
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF ENGLISH DEPARTMENT GRADUATE DIRECTOR.

ENG710 Master's Thesis
1- 6 credits Fall & Spring Semester
The student working on his/her master's thesis enrolls for credit in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.
ENG720 Research in Residence
0 credit  Fall & Spring Semester
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in ENG 710 (usually six credits). Credit not granted. May be regarded as full-time residence.

ENG730 Doctoral Dissertation
1-12 credits  Fall & Spring Semester
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor, but for not less than a total of 12 hours. Up to 12 hours may be taken in a regular semester, but not more than six in a summer session.

ENG740 Post-Candidacy Doctoral Dissertation
1-12 credits  Fall & Spring Semester
Required of all candidates for the Ph.D. who have advanced to candidacy. The student will enroll for credit as determined by his/her advisor, but not for less than a total of 12. Not more than 12 hours of ENG 740 may be taken in a regular semester, nor more than six in a summer session.

ENG750 Research in Residence
0 credit  Fall & Spring Semester
Used to establish research in residence for the Ph.D. and D.A., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

FRENCH

FRE501 Capstone
3 credits  Fall & Spring Semester
Course with a broad-based topic designed to integrate high-level linguistic, critical and analytical skills with the body of knowledge acquired during the course of study toward the major. Topics vary. Open only to undergraduates in the last semester of their French major. Course is writing intensive; fulfills writing credit requirement.
PREREQUISITE: TO BE TAKEN IN THE LAST SEMESTER OF THE MAJOR.

FRE591 Directed Readings
1-3 credits  Offered By Announcement Only
May be repeated for credit if topic is different.
PREREQUISITE: ONE 500-LEVEL COURSE AND PERMISSION OF INSTRUCTOR.

FRE592 Directed Readings
1-3 credits  Offered By Announcement Only
PREREQUISITE: ONE 500-LEVEL COURSE AND PERMISSION OF INSTRUCTOR.

FRE593 Directed Readings
1-3 credits  Offered By Announcement Only
PREREQUISITE: ONE 500-LEVEL COURSE AND PERMISSION OF INSTRUCTOR.

FRE594 Senior honors Thesis I
3 credits  Fall & Spring Semester
Directed research for honors thesis.
PREREQUISITE: MUST HAVE COMPLETED AT LEAST TWELVE CREDITS AT THE 300-LEVEL OR ABOVE TOWARDS FRENCH MAJOR, MUST MEET ELIGIBILITY FOR HONORS IN FRENCH.
FRE595 Senior Honors Thesis II
3 credits
Directed writing of honors thesis.
PREREQUISITE: FRE 594.

FRE611 Topics in French Medieval Literature
3 credits
Recent topics: exile, the epic, orientalism, imperialism, monsters.

FRE612 Topics in French Renaissance Literature
3 credits
Specific genres, works, authors, and movements. Possible topics: Melancholy and Madness; Montaigne; Rabelais; Marguerite de Navarre; lyric poetry.

FRE613 Topics in 17th Century French Literature
3 credits
Recent topics: Racine, Moliere, Corneille: Pascal and the Moralist tradition, the birth of the psychological novel, love and war.

FRE614 Topics in 18th Century French Literature
3 credits
Recent topics: Diderot, Rousseau, Sade; exoticism as related to political theory; the epistolary novel; the Enlightenment and postcolonial theory.

FRE615 Topics in 19th Century French Literature
3 credits
Recent topics: Balzac, Stendhal, Flaubert; Dandysm and Decadence; the Symbolist movement.

FRE616 Topics in 20th-21st Century French Literature
3 credits
Recent topics: Paris 1913; Surrealism; Artaud, Beckett, Ionesco, Genet; the Noveau Roman.

FRE621 Special Topics in French Studies
3 credits

FRE625 Elementary French for Graduate Research
0 credit
Grammatical structuring, verb tenses, and word families necessary for reading text with minimal use of a dictionary. May fulfill the Foreign Language Reading Competency Requirement (consult your graduate advisor).

FRE675 Topics in Francophone Studies
3 credits
Recent topics: travel narratives, literary historiography, discourses of race, colonialism, multilingualism and literacy, nationalism and culture.

FRE691 Writing Practicum
1 credit
The writing of a publishable research paper under faculty guidance.

FRE692 Directed Readings
1-3 credits
FRE730 Pre-Candidacy Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. Prior to admission to candidacy, the student will enroll for credit as determined by his/her advisor. Not more than 12 hours of FRE 730 may be taken in a regular semester, nor more than six in a summer session. Students who have not passed their qualifying examinations yet, but are not taking any courses, may enroll in FRE 730.

FRE740 Post-Candidacy Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. After admission to candidacy, the student will enroll for credit as determined by his/her advisor. Not more than 12 hours of FRE 740 may be taken in a regular semester, nor more than six in a summer session. Students who have passed their qualifying examinations, but are not taking courses any more, may enroll in FRE 740. Where a student has passed his/her(a) qualifying examinations, and (b) is engaged in an assistantship, he/she may still take the maximum allowable credit stated above.

FRE750 Research in Residence
0 credit                     Fall & Spring Semester & First & Second Summer Session
Used to establish residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined the Dean of the Graduate School.

GEOGRAPHY

GEG501 Place, Region, Nature
3 credits                                             Offered By Announcement Only
Introductory seminar for Graduate students about geographic thought and geographical traditions.
PREREQUISITE: AT LEAST 6 CREDITS IN GEOGRAPHY OR PERMISSION FROM INSTRUCTOR.

GEG510 Survey Research in Geography
3 credits                                             Offered By Announcement Only
The use of survey research including the choice of a survey mechanism, sampling, questionnaire design, survey logistics, survey analysis, and reporting of results.

GEG511 Field Studies in Geography
1- 6 credits   Offered By Announcement Only
One to six weeks of intensive geographic field studies outside the Miami area. Lectures will be given prior to departure. The locations and topics of study will vary.
PREREQUISITE: GEG 105 OR ANY 200-LEVEL GEOGRAPHY COURSE.

GEG515 Human Dimensions of Global Environmental Change
3 credits                                             Fall Semester
Explores the human dimensions of global environmental change using an interdisciplinary approach. The course is reading and writing intensive. Special attention is given to the central role that land-use/cover change plays in the larger realm of global environmental change.
PREREQUISITE: GEG 105 AND JUNIOR/SENIOR STANDING.

GEG520 Immigration to the United States
3 credits                                             Fall Semester
A description and analysis of current immigration patterns in the United States.
PREREQUISITE: ANY 100 OR 200 LEVEL COURSE OR PERMISSION FROM INSTRUCTOR.
GEG521 Global Trade
3 credits Offered By Announcement Only
Geographic analysis of the distribution of economic activities and capabilities, with emphasis on contemporary trade patterns and policies.

GEG522 Urbanization in the Developing World
3 credits Spring Semester
Patterns and processes in large cities in the developing world are examined.
PREREQUISITE: ANY 100 OR 200 LEVEL COURSE IN GEOGRAPHY OR PERMISSION FROM INSTRUCTOR.

GEG523 Seminar in Urban Management
3 credits Fall Semester
Identification of and responses to urban problems in large cities in European and Latin American metropolitan areas. Emphasis is on demographic, cultural/ethnic, service-provision, environmental, transportation, and land-use problems. Approach is via case studies, theory applications, and planning practicalities.

GEG525 Problems in Geography
1-6 credits Fall & Spring Semester
Content and prerequisites announced when offered. Course may be repeated for credit if content varies.
PREREQUISITE: GEOGRAPHY GRADUATE STUDENT, MAJOR, OR MINOR ONLY.

GEG530 Resources and Society
3 credits Offered By Announcement Only
This course examines the relations between human society and material nature from within a broad theoretical perspective, relating questions of science, culture, and technology to the politics and economics of natural resources, focusing particularly on water, food, and petroleum.
PREREQUISITE: 300-LEVEL COURSE IN HUMAN GEOGRAPHY OR PERMISSION OF INSTRUCTOR.

GEG535 Internship in Geography
1-4 credits Fall & Spring Semester
Students are assigned to work for a local public or private agency.
PREREQUISITE: 15 CREDITS IN GEOGRAPHY AND PERMISSION OF DEPARTMENT.

GEG545 Special Topics
3 credits Fall & Spring Semester
PREREQUISITE: NINE CREDITS IN GEOGRAPHY.

GEG552 Seminar on the Geography of South Florida
3 credits Offered By Announcement Only
Human and physical geography of South Florida.
PREREQUISITE: NINE CREDITS IN GEOGRAPHY.

GEG555 Field Methods and Geospatial Analysis
3 credits Fall & Spring Semester

GEG570 Gender and Development
3 credits Offered By Announcement Only
Theoretical and empirical examination of gender and development processes through exploration of gender and development evolution as an academic discipline and application in development practice.
PREREQUISITE: GRADUATE STUDENTS OR PERMISSION OF INSTRUCTOR.
GEG580 Introductory Quantitative Methods for Geographical Analysis.
3 credits
Spring Semester
Basic quantitative methods for geographic analysis.
PREREQUISITE: GRADUATE STANDING

GEG582 Advanced Quantitative Methods
3 credits
Offered By Announcement Only
Continuation of GEG 481. The use of statistical methods and techniques in the solution of geographic research problems.
PREREQUISITE: GEG 481 OR GEG 580 OR PERMISSION OF INSTRUCTOR

GEG585 Advanced Cartography
3 credits
Fall & Spring Semester

GEG591 Introduction to GIS (Geographic Information Systems) for graduate students
0-3 credits
Offered By Announcement Only
Overview of basic concepts in GIS (Geographic Information Systems) for students wishing to get graduate credit. This class involves a student project using GIS.

GEG592 Advanced Environmental Remote Sensing
3 credits
Fall & Spring Semester
PREREQUISITE: GEG 199 OR EQUIVALENT

GEG593 Intermediate GIS
3 credits
Fall & Spring Semester
PREREQUISITE: GEG 591 OR EQUIVALENT OR PERMISSION OF INSTRUCTOR

GEG594 GIS and Environmental Modeling
3 credits
Fall & Spring Semester
PREREQUISITE: GEG 591 OR EQUIVALENT

GEG595 Web GISd Seminar on South Asia
3 credits
Fall & Spring Semester
Seminar on development-related issues in South Asia.
PREREQUISITE: GEG 391 OR EQUIVALENT

GEG603 Advanced Research Design in Geography
3 credits
Spring Semester
Designing and proposing geographic research projects based upon a critical reading of the geographical literature. Students will prepare a master's thesis (master's students) or dissertation (doctoral students) project proposal.
PREREQUISITE: GEG 503.

GEG625 Advance independent study in geography I
1-6 credits
Fall & Spring Semester & First & Second Summer Session
Advanced independent study for Two-Paper Option for first paper.
PREREQUISITE: PI

GEG637 Development Studies
3 credits
Offered By Announcement Only
Advanced seminar on issues in contemporary development studies.
PREREQUISITE: ANY 100 OR 200 LEVEL GEOGRAPHY COURSE OR PERMISSION FROM INSTRUCTOR
GEG645 Advanced Independent Study in Geography II
1-6 credits  Fall & Spring Semester & First & Second Summer Session
Advanced independent study for Two-Paper Option for second paper.
PREREQUISITE: PI

GEG651 Geopolitics and Geoculture
3 credits  Offered By Announcement Only
Advanced graduate seminar about the cultural context of geopolitics and foreign policy.
PREREQUISITE: ANY COURSE IN GEOGRAPHY OR PERMISSION FROM INSTRUCTOR.

GEG661 Advanced Urban Geography
3 credits  Offered By Announcement Only
Analysis of the spatial structure of urban centers, the development of and interaction between functional zones, and the movement of goods and people in urban areas.

GEG672 Environmental Monitoring and Assessment
0 credit  Spring Semester
Geographic monitoring and assessment of contaminated regions; important background legislation and government actions; pollution monitoring; superfund site remediation; geographic sampling of environmental populations; and, selected case studies.
PREREQUISITE: GEG 591, 592.

GEG681 Advanced Spatial Statistics
3 credits  Offered By Announcement Only
Social and environmental science applications of spatial statistical analysis illustrated with data and numerical (simulation experiments) examples employing interactive software. This course's focus is on spatial autocorrelation.
PREREQUISITE: GEG 582, 591.

GEG710 Master’s Thesis
1-6 credits  Fall & Spring Semester & First & Second Summer Session
The student working on his/her master’s thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

GEG720 Research in Residence
0 credit  Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master’s degree after the student has enrolled for the permissible cumulative total in GEG 710 (usually six credits). Credit not granted. May be regarded as full time residence.

GEG725 Continuous Registration--Master’s Study
0 credit  Fall & Spring Semester & First & Second Summer Session
To establish residence for non-thesis master’s students who are preparing for major examinations. Credit not granted. Regarded as full time residence.

GERMAN

GER521 Advanced German Studies
3 credits  Offered By Announcement Only
German language, literature, culture of the 18th-20th centuries. Involves independent research. WRITING CREDIT May be repeated for credit if topic is different.
PREREQUISITE: GER 363, 364, OR 365.
GER522 Special Topics in German Literature
3 credits  Offered By Announcement Only
WRITING CREDIT. May be repeated for credit if topic is different.
PREREQUISITE: TWO COURSES ON THE 300-LEVEL; PERMISSION OF THE INSTRUCTOR.

GER566 German Literature of the Twentieth Century
3 credits  Offered By Announcement Only
WRITING CREDIT. Major literary movements: prose, poetry, and drama.
PREREQUISITE: GER 363 OR 364.

GER591 Directed Readings
1-3 credits  Offered By Announcement Only
PREREQUISITE: TWO 300-LEVEL COURSES AND PERMISSION OF THE INSTRUCTOR.

GER592 Directed Readings
1-3 credits  Offered By Announcement Only
PREREQUISITE: TWO 300-LEVEL COURSES AND PERMISSION OF THE INSTRUCTOR.

GER593 Directed Readings
1-3 credits  Offered By Announcement Only
PREREQUISITE: TWO 300-LEVEL COURSES AND PERMISSION OF THE INSTRUCTOR.

GER594 Senior Honors Thesis I
3 credits  Fall & Spring Semester
Directed research for honors thesis.
PREREQUISITE: MUST HAVE COMPLETED AT LEAST NINE CREDITS AT THE 300-LEVEL OR ABOVE TOWARDS GERMAN MAJOR, MUST MEET ELIGIBILITY FOR HONORS IN GERMAN.

GER595 Senior Honors Thesis II
3 credits  Fall & Spring Semester
Directed writing of honors thesis.
PREREQUISITE: GER 594.

GER625 German for Graduate Research
0 credit  Offered By Announcement Only
Grammatical structuring, verb tenses, and word families necessary for reading text with minimal use of a dictionary. May fulfill the Foreign Language Reading Competency Requirement (consult your graduate advisor.)

GEOLOGICAL SCIENCES

GSC515 Applied Environmental Geology
3 credits  Spring Semester
An advanced undergraduate/graduate course providing knowledge and methods for effective environmental site surveys, to be presented in a weekly 3-hour lecture and discussion. The course will cover policies and regulation including applied practice to comply with safe environmental conduct and valid assessment. Case study, best management practice, and appropriate field equipment and approaches will complement two one-day field trips associated with this course.
PREREQUISITE: PERMISSION OF INSTRUCTOR OR DEPARTMENT CHAIR.

GSC520 Geology of Florida and the Caribbean
3 credits  Fall Semester
The land and marine geologic history, the natural resources and geologic hazards of Florida and the Caribbean region.
PREREQUISITE: GSC 110, 111, 260.
GSC540 Geophysics  
3 credits  
Spring Semester  
PREREQUISITE: PHY 205, 206.

GSC545 Introduction to Isotope and Nuclear Geology  
4 credits  
Offered By Announcement Only  
Radioactivity and particle counting. The geological time scale. Isotope fractionation in natural systems. Mass spectrometry and the measurements of relative isotopic abundances in the ocean, the atmosphere, and the solid earth. Lecture, 2 hours; laboratory, 4 hours.

GSC550 Hydrogeology  
3 credits  
Fall Semester  
Movement of subterranean water. The mechanical, chemical and thermal interaction of water with porous solids, and the transport of energy and chemical constituents. The origin of porosity and permeability. The controls exerted on aquifers by the lithology, stratigraphy and structure of geologic deposits and formations.  
PREREQUISITE: 8 CREDITS IN GEOLOGICAL SCIENCES AND PERMISSION OF INSTRUCTOR.

GSC555 Mathematical Methods for Geoscientists  
3 credits  
Fall Semester  
Background mathematics needed to solve problems in the geosciences. Applications in tectonics, structural geology, geochemical systems, seismology and hydrology.  
PREREQUISITE: MTH 112 OR 132, 211 OR 310, OR 312, AND PHY 206, OR EQUIVALENT.

GSC556 Complexity in Coastal Systems  
4 credits  
Offered By Announcement Only  
Different aspects of the coastal system and their interactions using inquiry-based learning; will include remote sensing data as a tool for data analysis and visualization.  
PREREQUISITE: SIX CREDITS IN BIOLOGY OR GEOLOGICAL SCIENCES.

GSC560 Colloquium - Current Topics in the Geosciences  
1 credit  
Fall Semester  
Weekly presentations and discussions. Written and oral presentations required.  
PREREQUISITE: SENIOR STANDING.

GSC561 Colloquium - Current Topics in the Geosciences  
1 credit  
Spring Semester  
Weekly presentations and discussions. Written and oral presentations required.  
PREREQUISITE: SENIOR STANDING.

GSC565 Fluxes of Energy and Matter in the Earth Systems  
3 credits  
Offered By Announcement Only  
Transport phenomena, motions, and deformation in Earth Systems.  
PREREQUISITE: GSC 110, 360.

GSC574 Special Studies  
1-4 credits  
Fall & Spring Semester & First & Second Summer Session  
Students engaged in approved field and/or laboratory activities, such as work at sea or in the laboratory under supervision, may register for credit.  
PREREQUISITE: PERMISSION OF DEPARTMENT.
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Graduate Course Listing
COLLEGE OF ARTS AND SCIENCES
GEOLOGICAL SCIENCES

GSC575 Special Studies
1-4 credits  Fall & Spring Semester & First & Second Summer Session
Students engaged in approved field and/or laboratory activities, such as work at sea or in the laboratory under supervision, may register for credit.
PREREQUISITE: PERMISSION OF DEPARTMENT.

GSC576 Special Studies
1-4 credits  Fall & Spring Semester & First & Second Summer Session
Students engaged in approved field and/or laboratory activities, such as work at sea or in the laboratory under supervision, may register for credit.
PREREQUISITE: PERMISSION OF DEPARTMENT.

GSC580 Summer Field Geology
4 credits  Spring Semester & First & Second Summer Session
An intensive four-week summer field laboratory study of modern geological processes and ancient rock sequences. Mapping, description and interpretation of rock and structural sequences, paleoenvironmental reconstruction, interpretation of tectonic history. Reports required. Touring course. Travel fee required.
PREREQUISITE: 18 CREDITS IN GEOLOGICAL SCIENCES AND/OR PERMISSION OF INSTRUCTOR.

GSC581 Summer Field Environmental Geology
2 credits  Spring Semester & First & Second Summer Session
Field evaluation of environmental geology problems in marine, coastal, wetland and terrestrial environments. Effects of human alteration of landscape, natural hazards, pollution of ground water, surface water and soils. Role of climate change on surficial environments. Reports required. Touring course. Travel fee required.
Corequisite: GSC 580.
PREREQUISITE: COREQUISITE GSC 580.

GSC582 Field Studies
1-4 credits  Offered By Announcement Only
Conducted field trips to selected geological sites in the United States and abroad. Report required.
PREREQUISITE: GRADUATE OR ADVANCED UNDERGRADUATE STANDING AND PERMISSION OF DEPARTMENT.

GSC596 Research in Geology
1-4 credits  Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: PERMISSION OF INSTRUCTOR.

HAITIAN
HAI625 Haitian Creole for Graduate Research I
0 credit  Fall Semester

HAI626 Haitian Creole for Graduate Research II
0 credit  Spring Semester
PREREQUISITE: HAI 625 OR ITS EQUIVALENT

HISTORY
HIS501 Studies in African History
3 credits  Offered By Announcement Only
Selected topics in African history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.
HIS511 Studies in Asian History
3 credits
Selected topics in Asian history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS515 Studies in Chinese History
3 credits
Selected topics in Chinese history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS531 Studies in European History
3 credits
Selected topics in European history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS534 Studies in Ancient History
3 credits
Selected topics in Ancient history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS536 Studies in Medieval History
3 credits
Selected topics in medieval history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS538 Studies in Early Modern European History
3 credits
Selected topics in European history before the French Revolution. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS544 Studies in Modern European History
3 credits
Selected topics in European history after the French Revolution. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS551 Studies in Latin American History
3 credits
Selected topics in Latin-American history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.
HIS553 Studies in Colonial Latin American History
3 credits Offered By Announcement Only
Selected topics in the colonial period of Latin-American history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL

HIS554 Studies in Modern Latin American History
3 credits Offered By Announcement Only
Selected topics in Latin-American history before and after Independence. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL

HIS561 Studies in United States History
3 credits Offered By Announcement Only
Selected topics in United States history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL

HIS564 Studies in American Intellectual and Cultural History
3 credits Offered By Announcement Only
Selected topics in American intellectual and cultural history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL

HIS565 Studies in American Political and Diplomatic History
3 credits Offered By Announcement Only
Selected topics in American political and diplomatic history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL

HIS569 Studies in African-American History
3 credits Offered By Announcement Only
Selected topics in African-American history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL

HIS570 Studies in Public History
3 credits Offered By Announcement Only
Selected topics in public history. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL

HIS591 Studies in Comparative History
3 credits Offered By Announcement Only
Selected topics in Comparative History. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL
HIS595 Studies in Visual History
3 credits
Offered By Announcement Only
Selected topics in the use of photographs and other visual evidence for historical purposes. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: THREE CREDITS IN HISTORY AT THE 300-LEVEL.

HIS599 Independent Research
3 credits
Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR.

HIS601 Directed Readings in African History
1-3 credits
Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR.

HIS622 Directed Readings in Asian History
1-3 credits
Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR.

HIS631 Directed Readings in European History
1-3 credits
Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR.

HIS633 Seminar in European History
3 credits
Offered By Announcement Only
Selected topics in European History.

HIS634 Seminar in Ancient History
3 credits
Offered By Announcement Only

HIS636 Seminar in Medieval History
3 credits
Offered By Announcement Only

HIS641 Field Preparation: Colonial Latin America
3 credits
Offered By Announcement Only
An introduction to central historical issues and historiographical debates in the field of Colonial Latin America.

HIS642 Field Preparation: Modern Latin America
3 credits
Offered By Announcement Only
An introduction to central historical issues and historiographical debates in the field of Modern Latin America.

HIS643 Field Preparation: Colonial and Revolutionary America
3 credits
Offered By Announcement Only
An introduction to central historical issues and historiographical debates in the field of Colonial and Revolutionary America.

HIS644 Field Preparation: Modern America
3 credits
Offered By Announcement Only
An introduction to central historical issues and historiographical debates in the field of Modern America.
HIS645 Field Preparation: Early Modern Europe
3 credits  Offered By Announcement Only
An introduction to central historical issues and historiographical debates in the field of Early Modern Europe.

HIS646 Field Preparation: Modern Europe
3 credits  Offered By Announcement Only
An introduction to central historical issues and historiographical debates in the field of Modern Europe.

HIS651 Directed Readings in Latin-American History
1-3 credits  Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR.

HIS653 Seminar in Latin-American History
3 credits  Offered By Announcement Only

HIS661 Directed Readings in American History
1-3 credits  Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR.

HIS663 Seminar in United States History
3 credits  Offered By Announcement Only

HIS691 Directed Readings in Comparative History
1-3 credits  Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR.

HIS693 Seminar in Comparative History
3 credits  Offered By Announcement Only

HIS695 Historiography
3 credits  Offered By Announcement Only
The philosophy, theory, and practice of history.

HIS696 History as a Profession
3 credits  Fall & Spring Semester
Practical experience for graduate students in designing courses; preparing lectures, conference papers and scholarly publications; and in applying for jobs and research grants
PREREQUISITE: COMPLETION OF GRADUATE SEMINAR PAPER OR EQUIVALENT

HIS710 Master's Thesis
1-6 credits  Fall & Spring Semester
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

HIS720 Research in Residence
0 credit  Fall & Spring Semester
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in HIS 710 (usually six credits). Credit not granted. May be regarded as full time residence.
HIS725 Continuous Registration--Master's Study  
0 credit  
Fall & Spring Semester  
To establish residence for non-thesis master's students who are preparing for major examinations. Credit not granted. Regarded as full time residence.

HIS730 Doctoral Dissertation  
1-12 credits  
Fall & Spring Semester  
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor, but for not less than a total of 12 hours. Up to 12 hours may be taken in a regular semester, but not more than six in a summer session.

HIS740 Post-Candidacy Doctoral Dissertation  
1-12 credits  
Fall & Spring Semester  
Required of all candidates for the Ph.D. who have advanced to candidacy. The student will enroll for credit as determined by his/her advisor, but not for less than a total of 12. Not more than 12 hours of HIS 740 may be taken in a regular semester, nor more than six in a summer session.  
PREREQUISITE: ABD STATUS

HIS750 Research in Residence  
0 credit  
Fall & Spring Semester  
Used to establish research in residence for the Ph.D. and D.A., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.
IGS517 Practicum in International Administration
3 credits                    Fall & Spring Semester & First & Second Summer Session
The practicum gives students the opportunity to apply academic theory and acquired skills in international administration under real world conditions. Students first complete an approved internship in an appropriate organization and then present a report/case study analysis under the supervision of the MAIA faculty.
PREREQUISITE: PERMISSION OF PROGRAM COORDINATOR

IGS545 Global Warming Policy in European Union
3 credits                                                      First Summer Session
This course studies the EU, and especially the French, efforts to ecologically modernize their advanced economies particularly in regards to global warming emissions and energy usage. Class is centered in Paris with excursions to Strasbourg and Freiburg.

IGS599 Special Topics
0- 3 credits   Not Offered; Transfer Credit Only
The UM/MAIA program has a cooperation and student exchange program with St. Petersburg State University in St. Petersburg, Russia, Charles University in Prague, Czech Republic and Belgrano University in Argentina.
PREREQUISITE: PERMISSION OF PROGRAM COORDINATOR

IGS611 International Organizations
3 credits                                                           Spring Semester
Covers the entire spectrum of international organizations and the theoretical and practical issues relating to international organizations including peace and security, human rights, and economic development.
PREREQUISITE: GRADUATE STUDENTS ONLY

IGS612 International Administration
3 credits                                                           Spring Semester
Presents a broad overview of concepts, theories, processes, and practical global challenges confronting professional public/nonprofit managers; discusses contemporary issues facing multi-national corporations, non-government organizations, and public agencies; and analyzes the similarities and differences between public, non-profit and private management.
PREREQUISITE: GRADUATE STUDENTS ONLY

IGS613 World Cultures, Religions and Communications
3 credits                                                             Fall Semester
The course will overview the world religions and cultures as a backdrop of effective communication for international professionals. The study of comparative religions and cultures will make students aware of special challenges in international and intercultural communications, and the role of mass media in international relations.
PREREQUISITE: GRADUATE STUDENTS ONLY

IGS614 World Affairs
3 credits                                                    Fall & Spring Semester
This course introduces the conceptual basics of international relations and trains students in analytical and critical thinking skills through familiarity with the broad palette of issues and actors that make up today's world politics. Topics include the origins of the state and its changing role in today's world and an examination of the actors in international relations and the issues before them.
PREREQUISITE: GRADUATE STUDENTS ONLY
GRADUATE SCHOOL
INTERDISCIPLINARY GLOBAL STUDIES

IGS615 International Economics for MAIA
  3 credits          Spring Semester
Reviews the essentials of International Economics. It then provides students with
an operational understanding of the theory of comparative advantage and its application
to policy issues.
PREREQUISITE: GRADUATE STUDENTS ONLY

IGS616 Administration of Organizations
  3 credits          Fall Semester
Explores organizations from the strategic perspective of the leader, identifying
common elements of thinking, structure, measures, outcomes, issues, and challenges
faced by those who seek leadership roles in international administration.
PREREQUISITE: GRADUATE STUDENTS ONLY

IGS699 Directed Readings
  3 credits          Fall & Spring Semester & First & Second Summer Session
There are no special notes for this course.
PREREQUISITE: PERMISSION OF PROGRAM COORDINATOR

IGS720 MAIA Masters Project
  0-9 credits      Fall & Spring Semester & First & Second Summer Session
For students conducting additional research, practica, field experience or special
projects as part of their graduate experience.
PREREQUISITE: PERMISSION OF THE PROGRAM DIRECTOR ONLY.
INS503 Int Relations Topics
3 credits Offered By Announcement Only
Selected topics in International Relations Theory. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.

INS504 Int Rel Topics II
3 credits Offered By Announcement Only
Selected topics in International Relations Theory. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.

INS510 ISSUES IN INS
3 credits Offered By Announcement Only
Analysis of current issues of international importance.

INS511 Issues in INS II
3 credits Offered By Announcement Only
Analysis of current issues of international importance.

INS512 International Administration
3 credits Fall Semester
Introductory course for the Master of Arts in International Administration.
PREREQUISITE: GRADUATE STUDENTS ONLY.

INS513 Information and Communication in International Relations
3 credits Fall Semester
First semester offering for students in the Master of Arts in International Administration program.
PREREQUISITE: GRADUATE STUDENTS ONLY.

INS514 World Affairs
3 credits Fall Semester
Explores the complexity of world affairs in relation to international administrative fields. First semester offering for students in the Master of Arts in International Administration program.
PREREQUISITE: GRADUATE STUDENTS ONLY.

INS515 Independent Study
1-6 credits Fall & Spring Semester & First & Second Summer Session
Advanced level research done under the guidance of a selected faculty member. This course can be used as one of the two 500-level requirements for International Studies majors.

INS516 Str Thinking, Neg and Bargaining
3 credits Spring Semester
Second semester offering for students in the Master of International Administration program.
PREREQUISITE: GRADUATE STUDENTS ONLY.
INS517 Practicum in International Administration

3 credits Offered By Announcement Only

Each student in the Master of Arts in International Studies (with a specialization in International Administration) is required to complete a three (3) credit practicum/internship during the summer months subsequent to their completion of the fall and spring semester. The purpose of the practicum is to give each student the necessary skills to help advance their professional careers.

PREREQUISITE: PERMISSION OF PROGRAM COORDINATOR.

INS519 Internship

1-3 credits Fall & Spring Semester & First & Second Summer Session

A research paper is required for this course. The student works with a selected faculty member who determines the length and scope of the project. The Student is responsible for finding the internship position.

INS520 Microeconomics for INS

3 credits Offered By Announcement Only

Microeconomics for students of international studies. Topics will include rationality, market failure and comparative advantage.

PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS521 INT'L ECON TOPICS II (International Economic System Topics)

3 credits Offered By Announcement Only

Selected topics in International Economics. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.

PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS522 Latin American Political Economy

3 credits Offered By Announcement Only

Latin American political economy including analysis of market reform and integration of the region into the world economy.

PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS523 Economics of Terrorism

3 credits Spring Semester

Economic resources of terrorist movements today: their financing, acquisition of tools, recruitment, and operations.

PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS524 INTL ECON Topics

3 credits Offered By Announcement Only

PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS530 Comparative Analysis

3 credits Offered By Announcement Only

Advanced overview of the comparative method. Required for students specializing in Comparative Studies at the graduate level.

PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.
INS531 Dictatorship and Human Rights
3 credits
Offered By Announcement Only
How have societies coped with traumatic pasts, and how have they faced the tension between remembering and forgetting? This course will explore these issues with a view to various approaches and scenarios.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS532 Globalization and Human Rights
3 credits
Offered By Announcement Only
The integration of markets has many concerns for the political and economic rights of the common citizen. This course examines the effect of globalization on the human rights standards throughout the world.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS533 Transnational Social Movements
3 credits
Offered By Announcement Only
Focuses on global civic activism and contentious politics, with particular attention to transnational non-state actors - NGOs, social movements, environmental protection, and the emergence of a global civil society.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS534 Military, State and Society
3 credits
Offered By Announcement Only
The role of the military in state formation; questions of military rule, civilian control, and social structures in contemporary world politics.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS536 Comparative Political Regimes
3 credits
Offered By Announcement Only
Literature concerned with the transition from authoritarianism to democracy in various parts of the world.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS537 Comparative Political Economy
3 credits
Fall Semester
Compares how domestic politics and macroeconomic policies interact with globalization. Case studies include welfare states in the U.S. and Europe, East Asian development, post-communist transitions and market restructuring in Latin America and Africa.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS540 National Security
3 credits
Offered By Announcement Only
The central issues concerning European security since World War II, with emphasis on the period since the end of the Cold War.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS541 The Role of Intelligence in U.S. National Security
3 credits
Offered By Announcement Only
Required alternate for students concentrating in Strategic Studies. Explains what intelligence is, how it is collected and analyzed, and what it contributes to U.S. national security. Discusses the issue of secret intelligence activities in a democratic society.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.
INS542 Drug-Trafficking in the Americas
3 credits
Fall Semester
The political economy of the U.S.-Latin American drug trade in the 20th Century along with the dynamics of the U.S.-led war on drugs through the first years of the Twenty First Century.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS543 National Security and Foreign Policy
3 credits
Second Summer Session
Explores alternative conceptualizations of "security" and the new challenges to U.S. national security that have emerged in the Post-Cold War era.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS550 Non-Western Regional Topics
3 credits
Offered By Announcement Only
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS551 Regional Topics II
3 credits
Offered By Announcement Only
Selected topics in International Business. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS560 US Foreign Policy
3 credits
Spring Semester
The leading approaches to the analysis of American foreign policy. Particular emphasis will be placed on the post-Cold War period and the new challenges to U.S. foreign policy of the 21st century.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS561 Negotiation and Bargaining
3 credits
Spring Semester
Examines the nature of diplomatic negotiation through readings and discussion of international negotiation and through the case method, selecting several cases of high-level policy issues in which the United States has been a principal actor.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS562 International Peace and Conflict Resolution
3 credits
Offered By Announcement Only
The major sources of conflict, and what resources are available for making and keeping the peace? This class introduces students to the most fundamental concerns of the field of International Relations (IR), and especially of its subfield IPCR.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS563 International Organizations
3 credits
Offered By Announcement Only
The role, function, and impact on states of international governmental and non-governmental organizations in critical areas like peace and security, human rights, economic development, and environmental degradation.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.
INS564 International Law
3 credits Fall Semester
How international law affects the conduct of states. Issues include jurisdiction, diplomatic immunity, the use of armed force, peaceful dispute settlement among states, human rights, and the International Criminal Court.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS565 The World Before European Domination
3 credits Spring Semester
The historical roots of the contemporary international system. Its objective is to question the standard Eurocentric perspective on the rise of the West to a dominant position in the global system.
PREREQUISITE: 15 CREDITS IN ADVANCED LEVEL SOCIAL SCIENCES OR PERMISSION OF INSTRUCTOR.

INS566 US-Latin American Relations
3 credits Fall Semester
Political, economic and strategic aspects of U.S.-Latin American relations; the historical experience and contemporary issues, including the influence of extra-regional parties such as Europe and China.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS567 Foreign Policy Topics
3 credits Offered By Announcement Only
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS570 Globalization and Health
3 credits Fall Semester
Globalization and its benefits and threats to public health; the relationship between global economic, political, social, cultural, environmental and technological changes and their impact on human health.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS571 International Development and Human Welfare
3 credits Spring Semester
Health and development links; macroeconomic policies and their impact on social equity; poverty and structural inequities; and other key issues that influence human development.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS572 Global Health Policy and Ethics
3 credits Fall & Spring Semester
National, regional and global health policies with special consideration to ethical and human rights issues; policies and the moral considerations that shape public health policy.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS573 Disasters, Terrorism and Global Public Health
3 credits Spring Semester
The historical processes and present trends of disasters, terrorism, humanitarian emergencies and their impact on human health, safety and security.
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.
INS580 Latin American Comparative Politics  
3 credits  
Fall Semester  
The major intellectual debates shaping the field of comparative politics including: (1) development, (2) military politics, (3) democratization and (4) the emergence of new social movements.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS581 Politics and Ideology in Latin America  
3 credits  
Offered By Announcement Only  
The roles played by both "class" and the "new social movements" in the emergence of new modes of political representation.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS582 Problems of Latin American Democracies  
3 credits  
Offered By Announcement Only  
The Left and the Right, business, and indigenous movements along with issues such as transitional justice, state reform, public security, human rights and the politics of memory.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS583 Chile: Politics and Society  
3 credits  
Offered By Announcement Only  
Changes in Chilean politics and society. The three chronological parts of Chilean history: pre-1973, the years of dictatorship and the contemporary transition to democracy since 1990.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS584 Latin American Thought  
3 credits  
Spring Semester  
The evolution of Latin American thought through political and intellectual history; the classical writings of the main "pensadores", and a comparative analysis of contemporary ideological trends.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS585 Dilemmas of Mexical Democracy  
3 credits  
Offered By Announcement Only  
Contemporary politics in Mexico and US-Mexican relations first-hand during visits to Mexico City and Oaxaca. Meetings with Mexican scholars and civil society leaders are included.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS586 Brazil in Transition  
3 credits  
Offered By Announcement Only  
The social, economic, cultural transformations shaping Brazilian politics. In addition to visiting Rio de Janeiro and Salvador, there will be seminars with Brazilian academics and social and political activists.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS587 Politics in Central America  
3 credits  
Offered By Announcement Only  
The domestic issues of the Central American republics and their relationships with the United States, other western hemisphere countries and the global system.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.
INS588 Politics in the Andes  
3 credits  Offered By Announcement Only  
The domestic issues of the Andean republics and their relationships with the United States, other western hemisphere countries and the global system.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS589 Argentine Politics and Society  
3 credits  Offered By Announcement Only  
Seminar offered in Buenos Aires covering dilemmas of democratic consolidation, social justice, and market reform. Students will meet with Argentine social scientists and leaders of major social, economic, and political movements.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS591 The European Union  
3 credits  Fall & Spring Semester  
The European Union's history, institutions, policies and contemporary issues.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS592 European Union and the World  
3 credits  Spring Semester  
The European Union's development, its main institutions and policies followed by an analysis of the main features of the European Union's external relations.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS593 European Security  
3 credits  Spring Semester  
Regional security in Europe, focusing on NATO expansion, EU expansion, Russian foreign policy, and related issues.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS594 European Topics  
3 credits  Offered By Announcement Only  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS595 European Social Movements  
3 credits  Offered By Announcement Only  
The major social movements active today throughout Europe including those concerned with the environment, agriculture, poverty, racism, defending social democracy, the rights of workers, minorities, and women.  
PREREQUISITE: GRADUATE STUDENT, UPPER LEVEL UNDERGRADUATE OR PERMISSION OF INSTRUCTOR.

INS599 Special Topics  
3 credits  Offered By Announcement Only

INS601 IR Theory  
3 credits  Spring Semester  
Introduces students to key historic events, themes, concepts, and theories that have animated the practice and scholarship of international relations.  
PREREQUISITE: GRADUATE STANDING.

INS603 Dissertation Proposal  
3 credits  Spring Semester  
A workshop designed to assist doctoral students in the preparation of a proposal for their dissertation research projects.  
PREREQUISITE: GRADUATE STANDING.
INS610 Graduate Seminar in INS
3 credits Offered By Announcement Only
PREREQUISITE: GRADUATE STANDING.

INS611 INT RELATNS METH II (International Relations Methodology II)
3 credits Spring Semester
Introduces graduate students to issues of research design and research methods in International Relations. The course will focus on three main methodological approaches in political science: qualitative case study, quantitative research and formal modeling. Apart from examining the principles guiding the choice of methods (and the tradeoffs involved in that choice), the course will examine how these methods have been applied to the study of three major sub-fields of international relations: international political economy, security studies, and international environmental regimes. It also aims to provide the students with basic knowledge on how to apply these methods to their own research.
PREREQUISITE: GRADUATE STANDING.

INS615 Independent Study
1-3 credits Offered By Announcement Only
PREREQUISITE: GRADUATE STANDING.

INS620 Economics of the International System
3 credits Offered By Announcement Only
The essentials of International Economics providing students with an operational understanding of the theory of comparative advantage and its applications to policy issues.
PREREQUISITE: GRADUATE STANDING.

INS621 Economics Development
3 credits Offered By Announcement Only
International economics; rigorous but nontechnical presentation of international trade theory; globalization; commercial policy; determination of exchange rates; the international monetary system.
PREREQUISITE: GRADUATE STANDING.

INS622 Advanced Seminar in International Economics
3 credits Offered By Announcement Only
This is a seminar in International Economics at the graduate level. The first part consists of a rigorous but nontechnical presentation of international trade theory, followed by a discussion of the main arguments for protection and their validity. The third part of the course analyzes the process of globalization; its meaning, measurement and effects. A final brief section is devoted to the determination of exchange rates and the international monetary system.
PREREQUISITE: GRADUATE STANDING.

INS630 Advanced Seminar in Comparative Studies
3 credits Fall Semester
PREREQUISITE: GRADUATE STANDING.

INS640 Conflict and its Alternatives
3 credits Offered By Announcement Only
Historical, theoretical, and empirical analyses of violent conflict. Alternatives to violent conflict are explored including the prevention and control of war, preventive diplomacy, crisis management and conflict transformation.
PREREQUISITE: GRADUATE STANDING.
INS641 Advanced ISC Seminar
3 credits Offered By Announcement Only

INS650 Advanced Regional Seminar
3 credits Offered By Announcement Only
PREREQUISITE: GRADUATE STANDING.

INS660 Foreign Policy Analysis
3 credits Offered By Announcement Only
Develops skills in conceptualization, description, explanation, evaluation and
prescription, concentrating on leading foreign policy issues, sources, and research
techniques.
PREREQUISITE: GRADUATE STANDING.

INS670 Advanced Seminar in International Health
3 credits Offered By Announcement Only
PREREQUISITE: GRADUATE STANDING.

INS680 Advanced Seminar on Latin America
3 credits Offered By Announcement Only
PREREQUISITE: GRADUATE STANDING.

INS692 ADV SEMINAR - EUROPE (Advanced Seminar on Europe)
3 credits Offered By Announcement Only

INS699 Readings in International Studies
1-3 credits Fall & Spring Semester & First & Second Summer Session

INS710 Master's Thesis
1-6 credits Fall & Spring Semester & First & Second Summer Session
The student working on his/her master's thesis enrolls for credit, in most departments
not to exceed six, as determined by his/her advisor. Credit is not awarded until
the thesis has been accepted.

INS720 Research in Residence
0 credit Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master's degree
after the student has enrolled for the permissible cumulative total in INS 710
(usually six credits). Credit not granted. May be regarded as full time residence.

INS725 Continuous Registration--Master's Study
0 credit Fall & Spring Semester & First & Second Summer Session
To establish residence for non-thesis master's students who are preparing for major
examinations. Credit not granted. Regarded as full time residence.

INS730 Doctoral Dissertation
1-12 credits Fall & Spring Semester & First & Second Summer Session
A total of 12 hours of INS 730 is required of all candidates for the Ph.D. Not
more than 12 dissertation credits may be taken during the Fall or Spring semesters,
nor more than six in a summer session.
INS740 Post-candidacy Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. who have advanced to candidacy. The student will enroll for credit as determined by his/her advisor, but not for less than a total of 12. Not more than 12 hours of INS 740 may be taken in a regular semester, nor more than six in a summer session.

INS750 Research in Residence
0 credit                     Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D. and D.A., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

ITALIAN
ITA591 Directed Readings
1-3 credits   Offered By Announcement Only
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

ITA592 Directed Readings
1-3 credits   Offered By Announcement Only
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

ITA593 Directed Readings
1-3 credits   Offered By Announcement Only
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

ITA625 Italian for Graduate Research
0 credit                                               Offered By Announcement Only
Grammatical structuring, verb tenses, and word families necessary for reading text with minimal use of a dictionary. May fulfill the Foreign Language Reading Competency Requirement (consult your graduate advisor).

LATIN
LAT625 Elementary Latin for Graduate Research
0 credit                                               Offered By Announcement Only
Grammatical structures, verb tenses, and word families necessary for reading texts with minimal use of a dictionary. May fulfill the Foreign Language Reading Competency Requirement (consult your graduate advisor).

LATIN AMERICAN STUDIES
LAS501 Interdisciplinarity in Latin American and Caribbean Studies.
3 credits                                                             Fall Semester
Interdisciplinary methods and politics of Latin American and Caribbean area Studies.
PREREQUISITE: SIX CREDITS IN LAS OR LAS-APPROVED COURSES AT OR ABOVE THE 300-LEVEL

LAS502 Research Design in Latin American Studies
3 credits                                                           Spring Semester
Interdisciplinary research methods and skills in Latin American and Caribbean studies.
PREREQUISITE: LAS 501 OR PERMISSION OF INSTRUCTOR

LAS503 Program Seminar in Latin American Studies and Caribbean Studies
3 credits                                                    Fall & Spring Semester
Content of course will vary by semester.
PREREQUISITE: LAS 501 OR SIX CREDITS IN LAS OR LAS-APPROVED COURSES AT OR ABOVE THE 300-LEVEL.
LAS504 Interdisciplinary Topics in Latin American and Caribbean Studies - Travel Course
3 credits   Spring Semester
Topics vary. Interdisciplinary focus is thematic and regional (e.g.: tourism in Yucatan; civil society in Chile, Haiti-Dominican Republic relations, cultural policy in the Caribbean, environmental policy in Panama.) Course involves travel during Spring Break and it has a program fee.
PREREQUISITE: LAS 101 AND SENIOR STATUS AND PERMISSION OF INSTRUCTOR

LAS505 Internship in Latin American and Caribbean Studies
1-3 credits  Fall & Spring Semester & First & Second Summer Session
On-site experience in business, governmental organization, or non-profit organization dealing with Latin America and/or the Caribbean.
PREREQUISITE: DECLARED MAJOR OR MINOR IN LATIN AMERICAN STUDIES; SIX CREDITS IN LAS OR LAS-APPROVED COURSES AT OR ABOVE THE 300-LEVEL, AND PERMISSION OF LAS DIRECTOR.

LAS520 Interdisciplinary Topics in Latin American and Caribbean Environments
3 credits   Fall & Spring Semester
Topics vary. Interdisciplinary focus on policies and impact of globalization on the environment.
PREREQUISITE: LAS 101 AND SENIOR STATUS

LAS521 Latin American Environmental Issues
3 credits   Fall Semester
PREREQUISITE: LAS 101 AND SENIOR STATUS, OR LAS 501, OR PERMISSION OF INSTRUCTOR

LAS594 Directed Readings in Latin America and Caribbean
3 credits   Fall & Spring Semester
Independent Study leading to an original piece of research, or creative project on a Latin American or Caribbean interdisciplinary topic.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF LAS DIRECTOR

LAS597 Readings for the Comprehensive Exam
3 credits   Fall & Spring Semester
Readings for M.A. students who are preparing for comprehensive examinations.
PREREQUISITE: PERMISSION OF ADVISOR AND PROGRAM DIRECTOR

LAS710 Pre-candidacy thesis credits
3 credits   Fall & Spring Semester
the student working on his/her master's thesis enrolls for credit, not to exceed three, before student has been admitted to candidacy. Credit is not awarded until the thesis has been accepted.

LAS715 Post-candidacy thesis credits
3 credits   Fall & Spring Semester
the student working on his/her master's thesis enrolls for credit, not to exceed six, after student has been admitted to candidacy. Credit is not awarded until the thesis has been accepted.
PREREQUISITE: ADMISSION TO CANDIDACY.

LAS720 Research in residence.
0 credit   Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in LAS 710 (usually six credits). Credit not granted. May be regarded as full time residence.
MLS595 Special Topics
3 credits                                                    Fall & Spring Semester

MLS596 Special Topics
3 credits                                              Offered By Announcement Only

MLS597 Special Topics
3 credits                                              Offered By Announcement Only

MLS601 Aspects of Creative and Reflective Thought
3 credits                                                    Fall & Spring Semester
Selected aspects of creative and reflective thought, based on materials from the
arts, the humanities, the sciences, the social sciences and history. The focus
will be on themes and issues represented in a variety of cultural traditions.

MLS602 Perspectives on Human Nature
3 credits                                                    Fall & Spring Semester
Basic theories of human nature proposed by the humanities, the sciences, and the
social sciences. The course deals with fundamental issues regarding the concept
of human nature, such as the nature of the self and its relation to society, the
impact of culture on self perception and the relation of thought to human action.

MLS603 Theories of the Physical Universe
3 credits                                                    Fall & Spring Semester
Various understandings of the nature of the universe and their impact on human
culture. The course will deal with critical issues addressed in the various attempts
to understand the physical world, such as fundamental structures and processes,
the limitation of human perception, and the interaction between the human species
and its environment.

MLS611 Studies in the Humanities
3 credits                                                    Fall & Spring Semester
Interdisciplinary study of selected topics in the Humanities.

MLS612 Studies in the Social Sciences
3 credits                                              Offered By Announcement Only
Interdisciplinary study of selected topics in the Social Sciences.

MLS613 Studies in the Sciences
3 credits                                              Offered By Announcement Only
Interdisciplinary study of selected topics in the sciences.

MLS621 Studies in the Humanities
3 credits                                              Offered By Announcement Only

MLS622 Studies in the Social Sciences
3 credits                                              Offered By Announcement Only

MLS623 Studies in the Sciences
3 credits                                              Offered By Announcement Only

MLS631 Studies in the Humanities
3 credits                                              Offered By Announcement Only
MLS696 Directed Readings
1-3 credits   Fall & Spring Semester
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF THE DIRECTOR OF THE PROGRAM.

MLS697 Directed Readings
1-3 credits   Fall & Spring Semester
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF THE DIRECTOR OF THE PROGRAM.

MLS698 Seminar in Liberal Studies
3 credits   Offered By Announcement Only

MLS699 Seminar in Liberal Studies
3 credits   Offered By Announcement Only

MLS710 Master's Thesis
1-6 credits   Fall & Spring Semester
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

MLS715 MALS Project
1-6 credits   Fall & Spring Semester
The student working on his/her MALS project enrolls for credit, not to exceed 6, as determined by his/her advisor. Credit is not awarded until the project has been accepted.

MLS720 Research in Residence
0 credit   Fall & Spring Semester
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in PSY 710 (usually six credits). Credit not granted. May be regarded as full time residence.

MLS725 Continuous Registration-Master's Study
0 credit   Offered By Announcement Only
To establish residence for non-thesis students who are preparing for major examinations. Credit not granted. Regarded as full time residence.

MATHEMATICS

MTH501 Place, Region, Nature
3 credits   Fall Semester
PREREQUISITE: 6 CREDITS IN GEG OR PERMISSION OF INSTRUCTOR

MTH502 History of Mathematics
3 credits   Fall Semester
The development of mathematics from its earliest beginnings through the first half of the twentieth century. Numeral systems, geometry, algebra, analysis and set theory.
PREREQUISITE: TWO COURSES IN MATHEMATICS AT THE 200 LEVEL OR ABOVE.

MTH504 Foundations of Geometry
3 credits   Fall Semester
Axiom systems and models of Euclidean and Non-Euclidean geometry.
PREREQUISITE: MTH 230 OR 309.
MTH505 Theory of Numbers
3 credits Spring Semester
Divisibility, primes; congruencies, quadratic residues and reciprocity; Diophantine
equations. Applications to cryptography.
PREREQUISITE: MTH 210 OR 504.

MTH506 Mathematical Logic
3 credits Offered By Announcement Only
Logics, truth, proof, logical consequence, model theory, formalization, and computation.
Meta-theory of first-order logic, computability theory, and Godel’s incompleteness
theorems. Related results by Church, Turing, and Tarski. Discussion of their philosophical
significance.
PREREQUISITE: MTH 230

MTH510 Linear Algebra
3 credits Spring Semester
Abstract vector spaces, bases and dimensions, linear maps, eigenvalues and eigenvectors,
inner product spaces, operators, spectral theorems, canonical forms.
PREREQUISITE: MTH 210; TRANSITION COURSE IN LOGICAL REASONING SUCH AS MTH 230 OR
309 RECOMMENDED BUT NOT REQUIRED.

MTH512 Elementary Complex Analysis
3 credits Spring Semester
Complex variables; conformal mapping, contour integration.
PREREQUISITE: MTH 211 OR 310.

MTH513 Partial Differential Equations I
3 credits Fall Semester
Derivation, well posedness, and qualitative properties of initial value and boundary
value problems for the heat, wave and Laplace equations. Energy methods, causality,
maximum principles, heat kernels, Fourier series, and potential theory.
PREREQUISITE: MTH 210, 311 AND EITHER MTH 211 OR 310.

MTH514 Partial Differential Equations II
3 credits Spring Semester
Continuation of MTH 513. Approximations of solutions, distributions and integral
transform methods, spectral theory and scattering. Applications to physical problems.
Nonlinear equations and phenomena.
PREREQUISITE: MTH 513 OR PERMISSION OF THE INSTRUCTOR.

MTH515 Ordinary Differential Equations
3 credits Fall Semester
Linear systems, equilibria and periodic solutions, stability analysis, bifurcation,
phase plane analysis, boundary value problems, applications to engineering and
physics.
PREREQUISITE: MTH 311 AND EITHER MTH 211 OR 310.

MTH516 Dynamics and Bifurcations
3 credits Spring Semester
Bifurcation of equilibria and periodic solutions, global theory of planar systems,
planar maps, nonlinear vibrations, forced oscillations, chaotic solutions, Hamiltonian
systems, applications to engineering and physics.
PREREQUISITE: MTH 515 OR PERMISSION OF INSTRUCTOR.
MTH517 Data Structures and Algorithm Analysis
3 credits
Offered By Announcement Only
Data abstraction, formal specification, trees, B-trees, balanced binary trees, graphs, searching and sorting. Algorithm analysis. Memory management.
PREREQUISITE: MTH 309 (OR 230) AND CSC 220

MTH520 Numerical Analysis I
3 credits
Spring Semester
Topics from numerical linear algebra including solving systems of equations, LU, QR, and SVD factorizations, eigenvalues and eigenvectors, interactive methods and applications.
PREREQUISITE: MTH 320 OR PERMISSION OF DEPARTMENT CHAIRMAN.

MTH521 Numerical Analysis II
3 credits
Offered By Announcement Only
Numerical solution of ordinary and partial differential equations.
PREREQUISITE: MTH 320 OR 520 OR PERMISSION OF DEPARTMENT CHAIRMAN.

MTH524 Introduction to Probability Theory
3 credits
Fall Semester
Probability spaces, random variables, expectation, limit theorems.
PREREQUISITE: MTH 224 AND 310

MTH525 Introduction to Mathematical Statistics
3 credits
Spring Semester
Probability distributions, theory of sampling and hypothesis testing.
PREREQUISITE: MTH 524.

MTH527 Theory of Computing
3 credits
Offered By Announcement Only
Finite-state automata, context-free grammars, pushdown automata, Turing machines and computability.
PREREQUISITE: MTH 309 OR MTH 461

MTH528 Combinatorics
3 credits
Offered By Announcement Only
Permutations and combinations, generating functions, enumerative analysis.
PREREQUISITE: MTH 461 OR MTH 561

MTH531 Topology I
3 credits
Fall Semester
Set theory, topological spaces, compactness, connectedness, separation properties, quotient spaces, Tychonoff Theorem, compactification, Urysohn Lemma and Tietze Extension Theorem, function spaces.
PREREQUISITE: MTH 230

MTH532 Topology II
3 credits
Spring Semester
Differential and topological manifolds, classical groups and associated manifolds, tangent and tensor bundles, vector fields, differential forms, transversality, Sard's theorem, Stokes' Theorem.
PREREQUISITE: MTH 210 AND 531.
MTH533 Introduction to Real Analysis I
3 credits
Fall Semester
Sequences and series in Euclidean space; sequences and series of functions; Fourier series; continuity, differentiation, and integration of functions between Euclidean spaces; implicit and inverse function theorems.
PREREQUISITE: MTH 230 AND MTH 310

MTH534 Introduction to Real Analysis II
3 credits
Spring Semester
Continuation of MTH 533.
PREREQUISITE: MTH 533.

MTH540 Algorithm Design and Analysis
3 credits
Offered By Announcement Only
Design techniques include divide-and-conquer, greedy method, dynamic programming, backtracking. Time and space complexity. Sorting, searching, combinatorial and graph algorithms.
PREREQUISITE: MTH 517 OR CSC 517

MTH542 Statistical Analysis
3 credits
Fall Semester
Statistical inference about one or two populations from interval, ordinal and categorical data; analysis of variance; simple and multiple linear regression; designing research studies.
PREREQUISITE: MTH 210, 224

MTH551 Introduction to Differential Geometry
3 credits
Fall Semester
Geometry of curves and surfaces in Euclidean space. Local space curve theory, intrinsic and extrinsic curvature of surfaces, geodesics, parallelism, and differential forms.
PREREQUISITE: MTH 210 AND EITHER MTH 211 OR 310

MTH561 Abstract Algebra I
3 credits
Fall Semester
Groups; rings; linear algebra; modules.
PREREQUISITE: MTH 210 AND PERMISSION OF DEPARTMENT CHAIRMAN.

MTH562 Abstract Algebra II
3 credits
Spring Semester
Continuation of MTH 561.
PREREQUISITE: MTH 561.

MTH571 Directed Readings in Mathematics
1- 3 credits
Fall & Spring Semester
Readings in special topics.
PREREQUISITE: GRADUATE STANDING; PERMISSION OF DEPARTMENT CHAIR.

MTH572 Directed Readings in Mathematics
1- 3 credits
Fall & Spring Semester
Readings in special topics.
PREREQUISITE: GRADUATE STANDING; PERMISSION OF DEPARTMENT CHAIR.

MTH591 Topics in Mathematics
1- 3 credits
Offered By Announcement Only
MTH592 Topics in Mathematics
1-3 credits Offered By Announcement Only

MTH593 Topics in Mathematics
1-3 credits Offered By Announcement Only

MTH594 Topics in Mathematics
1-3 credits Offered By Announcement Only

MTH609 Data Security and Cryptography
3 credits Offered By Announcement Only
Encryption algorithms; cryptographic techniques; access, information flow and inference controls.
PREREQUISITE: MTH 517 OR CSC 517 OR MTH 527 OR CSC 52

MTH612 Complexity Theory
3 credits Offered By Announcement Only
Models of computations, Blum's axioms, intractability, NP-completeness.
PREREQUISITE: MTH 527

MTH621 Mathematical Probability
3 credits Offered By Announcement Only
Development of the measure-theoretic approach to probability. Random variables, central limit theory, laws of large numbers, martingales.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

MTH625 Multivariate Analysis
3 credits Offered By Announcement Only
Sampling theory for multivariate normal populations. Component and factor analysis. Stochastic difference equations.
PREREQUISITE: MTH 525.

MTH630 Real Variables
3 credits Offered By Announcement Only
First semester of two semester sequence: General measure theory, Lebesgue measure and integration, Lp spaces, Fourier series in one and many variables, Fourier transforms, distributions, Sobolev spaces, applications to partial differential equations.
PREREQUISITE: MTH 533.

MTH631 Real Variables
3 credits Offered By Announcement Only
Second semester of a two semester sequence: General measure theory, Lebesgue measure and integration, Lp spaces, Fourier series in one and many variables, Fourier transforms, distributions, Sobolev spaces, applications to partial differential equations.
PREREQUISITE: MTH 630.

MTH632 Complex Variables
3 credits Offered By Announcement Only
First semester of a two semester sequence: Analytic functions, conformality, Cauchy's Theorem, representation theorems, harmonic functions, calculus of residues, Riemann Mapping Theorem, entire and meromorphic functions, analytic continuation, normal families.
PREREQUISITE: MTH 531.
MTH633 Complex Variables
3 credits
Offered By Announcement Only
Second semester of a two semester sequence: Analytic functions, conformality, Cauchy's Theorem, representation theorems, harmonic functions, calculus of residues, Riemann Mapping Theorem, entire and meromorphic functions, analytic continuation, normal families.
PREREQUISITE: MTH 632.

MTH638 Stochastic Processes
3 credits
Offered By Announcement Only
PREREQUISITE: MTH 631.

MTH640 Algebraic Topology
3 credits
Offered By Announcement Only
First semester of a two semester sequence: Homotopy and homotopy type, fundamental group, covering spaces, higher homotopy groups, simplicial singular and cellular homology, Eilenberg-Steenrod axioms, cohomology, universal coefficient theorem, products, Kunneth formula, duality theorems for manifolds, computations and applications.
PREREQUISITE: MTH 532.

MTH641 Algebraic Topology
3 credits
Offered By Announcement Only
Second semester of a two semester sequence: Homotopy and homotopy type, fundamental group, covering spaces, higher homotopy groups, simplicial singular and cellular homology, Eilenberg-Steenrod axioms, cohomology, universal coefficient theorem, products, Kunneth formula, duality theorems for manifolds, computations and applications.
PREREQUISITE: MTH 640.

MTH647 Computational Geometry
3 credits
Offered By Announcement Only
Algorithms for solving geometric problems arising from application domains including graphics, robotics, and GIS.
PREREQUISITE: MTH 517 OR PERMISSION OF INSTRUCTOR.

MTH651 Differential Geometry
3 credits
Offered By Announcement Only

MTH652 Differential Geometry
3 credits
Offered By Announcement Only

MTH657 Lie Groups
3 credits
Offered By Announcement Only

MTH661 Abstract Algebra
3 credits
Offered By Announcement Only
First semester of a two semester sequence: Group theory, ring theory, module theory, linear algebra.
PREREQUISITE: MTH 562.

MTH662 Abstract Algebra
3 credits
Offered By Announcement Only
Second semester of a two semester sequence: Group theory, ring theory, module theory, linear algebra.
PREREQUISITE: MTH 661.
MTH670 Directed Readings or Research
2-4 credits  Offered By Announcement Only

MTH680 Topics in Analysis
3 credits  Offered By Announcement Only

MTH681 Topics in Analysis
3 credits  Offered By Announcement Only

MTH682 Topics in Topology
3 credits  Offered By Announcement Only

MTH683 Topics in Topology
3 credits  Offered By Announcement Only

MTH685 Topics in Algebra
3 credits  Offered By Announcement Only

MTH686 Topics in Mathematics
3 credits  Offered By Announcement Only

MTH687 Topics in Mathematics
3 credits  Offered By Announcement Only

MTH692 Seminar
1-2 credits  Offered By Announcement Only

MTH720 Research in Residence
0 credit  Fall & Spring Semester & First & Second Summer Session
To establish a residence for non-thesis master's students who are preparing for
major examinations. Credit not granted. Regarded as full-time residence.

MTH730 Pre-Candidacy Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Credits earned in this course apply towards the 12 credit hour dissertation research
requirement of the graduate school. The student will enroll for credit as determined
by his/her dissertation advisor. Up to 12 hours may be taken in a regular semester,
but not more than six in a summer session.

MTH735 Research Project
1-6 credits  Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Doctoral of Arts degree. Student enrolls for
credit as determined by his/her advisor. Credit is not awarded until the doctoral
project has been accepted. Total enrollment may not exceed six credits.

MTH740 Post-Candidacy Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Credits earned in this course apply towards the 12 credit hour dissertation research
requirement of the graduate school. The student will enroll for credit as determined
by his/her dissertation advisor. Up to 12 hours may be taken in a regular semester,
but not more than six in a summer session.
MTH745 Research in Residence
0 credit                      Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for DA, after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

MTH750 Research in Residence
0 credit                      Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D. after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

MODERN LANGUAGES & LITERATURES

MLL597 Readings for the Ph.D. Examinations
1-3 credits                  Offered By Announcement Only
For Ph.D. students who are preparing for exams.
PREREQUISITE: PERMISSION OF DIRECTOR OF GRADUATE STUDIES

MLL599 Internship
1 credit                        Offered By Announcement Only
Students work in a community or business setting on issues related to language, culture, and/or teaching.

MLL601 Intro to Second Language Teaching: Theory and Practice
3 credits                      Fall Semester
Current trends in foreign language teaching with emphasis on introductory Latin language courses. Topics include: linguistic and psychological foundations, teaching methodologies, language skills development.
PREREQUISITE: GRADUATE STANDING

MLL602 Bilingualism
3 credits                        Offered By Announcement Only
Historical and Comparative study of phonology, syntax and semantics from Latin to the early stages of Romance languages. Philological readings of selected texts. Topics may vary.
PREREQUISITE: GRADUATE STANDING

MLL603 Topics in Critical Studies of Language
3 credits                        Offered By Announcement Only
Second language acquisition theory with emphasis on classroom-based research.
PREREQUISITE: GRADUATE STANDING

MLL604 Sociocultural Theory and Second Language Development
3 credits                        Offered By Announcement Only
The basic principles of the Sociocultural theory of Mind in the field of Foreign Language Teaching. How the teaching and learning of foreign/second languages can be explained utilizing sociocultural psychology. Focusing on Applied Linguistics, the seminar will explore the pedagogical implications of the theory, centering on Concept-Based Teaching and Dynamic Assessment in the Foreign Language Classroom.
PREREQUISITE: GRADUATE STANDING
MLL611 Introduction to Literary Theory
3 credits
Fall Semester
An introduction to the major concepts, issues, and debates that inform contemporary literary criticism.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF INSTRUCTOR

MLL612 Topics in Early Modern Comparative Literature
3 credits
Offered By Announcement Only
Specific genres, works, authors and movements in comparative perspective in the early modern period (1300-1750). Topics may include: Trans-Atlantic Baroque; Grotesque Literature; Petrarchan Poetry in Italy, France, and England; The Emergence of Professional Theatre in Western Europe.

MLL614 Readings in Literary Theory
3 credits
Spring Semester
Representative works of critical theory as related to philosophy, sociology of culture, psychoanalysis, hermeneutics, deconstruction, etc. May be repeated for credit if topics are different.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF INSTRUCTOR

MLL621 Special Topics in Literature
3 credits
Offered By Announcement Only
May be repeated for credit, if topics are different.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF INSTRUCTOR

MLL626 Topics in Comparative Literature
3 credits
Offered By Announcement Only
May be repeated for credit, if topics are different.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF INSTRUCTOR

MLL693 Teaching Practicum
3 credits
Offered By Announcement Only

PHILOSOPHY
PHI506 Mathematical Logic
3 credits
Offered By Announcement Only
Logics, truth, proof, logical consequences, model theory, formalization, and computation. Meta-theory of first-order logic, computability theory, and Goedel's Incompleteness theorems. Related results by church, Turing, and Tarski. Discussion of their philosophical significance.
PREREQUISITE: PHI 210 OR PHI 510

PHI510 Formal Logic
3 credits
Spring Semester
First and second-order quantification theory; metalogic.

PHI530 Ethical Theory
3 credits
Offered By Announcement Only
G. E. Moore to the present.
PREREQUISITE: THREE COURSES AT THE 200 LEVEL OR ABOVE, INCLUDING PHI 210 AND 330.

PHI533 Political Philosophy
3 credits
Offered By Announcement Only
A survey of some central issues and developments in political philosophy.
PREREQUISITE: THREE COURSES AT THE 200 LEVEL OR ABOVE, INCLUDING PHI 210 AND 330.
PHI540 Epistemology
3 credits
Offered By Announcement Only
A survey of the basic topics and questions in epistemology: knowledge acquisition and justification, perception, fallibilism, and skepticism.

PHI541 Mind and Language
3 credits
Offered By Announcement Only
Philosophical problems about signs, linguistic and mental representations, intentionality, action, and consciousness.

PHI543 Induction, Probability, and Scientific Method
3 credits
Offered By Announcement Only
Foundations of inductive reasoning and role of experiment in science.

PHI545 Metaphysics
3 credits
Offered By Announcement Only
A selection of topics dealing with the main problems of metaphysics: existence, modality, universals, identity and persistence through time, causation, the self and physicalism.

PHI546 Evidence and Knowledge in Medicine
3 credits
Spring Semester
Basic methodologies in medicine in the context of philosophical theories of evidence.
PREREQUISITE: 2 COURSES IN PHI, OR PERMISSION FROM INSTRUCTOR

PHI555 Philosophy of Education
3 credits
Fall Semester
Problems concerning the nature and aims of education.

PHI560 History of Logic
3 credits
Fall & Spring Semester
Aristotle, the Stoics, the Scholastics, Leibniz, Boole, DeMorgan, Peirce, Frege, and Russell and Whitehead.

PHI562 History of Ethics
3 credits
Offered By Announcement Only
A selection of ethical theories from Aristotle to Rawls.
PREREQUISITE: THREE COURSES AT THE 200 LEVEL OR ABOVE, INCLUDING PHI 210 AND 330.

PHI570 Pre-Socratics and Plato
3 credits
Offered By Announcement Only
Fragments from the Pre-Socratic and the dialogues of Plato.
PREREQUISITE: THREE COURSES AT THE 200 LEVEL OR ABOVE, INCLUDING PHI 210 AND 271.
PHI571 Aristotle and Hellenistic Philosophy
3 credits Offered By Announcement Only
A survey of central philosophical topics in Aristotle and Hellenistic Philosophers (Epicureans, Stoics, and Skeptics).
PREREQUISITE: THREE COURSES AT THE 200 LEVEL OR ABOVE, INCLUDING PHI 210 AND 271.

PHI572 Medieval Philosophy
3 credits Offered By Announcement Only
The patristic period through the scholasticism of the late middle ages.

PHI573 Early Modern Philosophy
3 credits Offered By Announcement Only
An examination of early modern philosophy from Hobbes and Descartes to Hume.
PREREQUISITE: THREE COURSES AT THE 200 LEVEL OR ABOVE, INCLUDING PHI 210 AND 272.

PHI575 Kant
3 credits Offered By Announcement Only
An examination of selected issues in Kant's theoretical or practical philosophy.
PREREQUISITE: THREE COURSES AT THE 200 LEVEL OR ABOVE, INCLUDING PHI 210 AND 272.

PHI581 Pragmatism
3 credits Offered By Announcement Only
Peirce, James, Dewey, and others.

PHI582 History of Analytic Philosophy
3 credits Offered By Announcement Only
The development of analytic philosophy from its beginnings in the work of Frege and Russell through logical positivism to contemporary philosophy.

PHI583 The Phenomenological Tradition
3 credits Offered By Announcement Only
An examination of the phenomenological movement (Edmund Husserl, Martin Heidegger, Maurice Merleau-Ponty, and others) and of its impact on contemporary thought.

PHI591 Special Topics
3 credits Offered By Announcement Only
A selected philosopher or philosophical problem. May be repeated for credit.
PREREQUISITE: SIX CREDITS IN PHILOSOPHY AND JUNIOR STANDING.

PHI592 Special Topics
3 credits Offered By Announcement Only
A selected philosopher or philosophical problem. May be repeated for credit.
PREREQUISITE: SIX CREDITS IN PHILOSOPHY AND JUNIOR STANDING.
PHI593 Special Topics
3 credits
Offered By Announcement Only
A selected philosopher or philosophical problem. May be repeated for credit. Prerequisite: Six credits in Philosophy and junior standing.
PREREQUISITE: SIX CREDITS IN PHILOSOPHY AND JUNIOR STANDING

PHI594 Independent Study in Philosophy
1-3 credits
Offered By Announcement Only
Directed reading on a topic or philosopher. May be repeated for credit.
PREREQUISITE: SIX CREDITS IN PHILOSOPHY AND JUNIOR STANDING.

PHI601 Proseminar (First Semester)
3 credits
Offered By Announcement Only
Covers the core texts from the history of analytic philosophy. First semester of the year-long proseminar for first-year graduate students in Philosophy.

PHI602 Proseminar (Second Semester)
3 credits
Offered By Announcement Only
Covers the core texts and issues of analytic philosophy in the second half of the twentieth century. Second semester of the year-long proseminar for first-year graduate students in Philosophy.
PREREQUISITE: PHI 601

PHI610 Topics in Logic
3 credits
Offered By Announcement Only
Problems in philosophical logic; non-standard logics.

PHI630 Seminar in Ethics
3 credits
Spring Semester
Problems in normative ethics, meta-ethics, and value theory.

PHI633 Seminar in Social and Political Philosophy
3 credits
Offered By Announcement Only
Morality and politics, rights and obligations, sources and limits of political obligation, and the function of the state.
PREREQUISITE: GRADUATE STANDING.

PHI636 Values, Norms, and Actions
3 credits
Offered By Announcement Only
The role of values and norms in practical reasoning and decision making.

PHI640 Seminar in Epistemology
3 credits
Offered By Announcement Only
Problems concerning knowledge: skepticism, belief, certainty, truth, and justification.

PHI641 Seminar in Philosophy of Language
3 credits
Offered By Announcement Only
Nature and uses of language; concepts of reference, truth, and meaning.

PHI643 Philosophy of Science
3 credits
Offered By Announcement Only
Selected topics in the philosophy of science, such as realism, explanation, and conceptual and methodological issues in the special sciences.
PHI644 Seminar in Philosophy of Mind
3 credits Offered By Announcement Only
Problems concerning mental phenomena: theories of perception, action, consciousness.

PHI645 Seminar in Metaphysics
3 credits Offered By Announcement Only
Problems related to the nature and kinds of being.

PHI651 Seminar in Philosophy of Art
3 credits Offered By Announcement Only
Problems related to beauty and the philosophy of art.

PHI652 Seminar in Philosophy of Religion
3 credits Offered By Announcement Only
Problems in philosophy of religion: the existence and attributes of God, the rationality of theistic belief, the problem of evil.

PHI671 Seminar in Ancient Philosophy
3 credits Offered By Announcement Only
A discussion of selected topics in ancient philosophy.

PHI675 Seminar in Modern Philosophy
3 credits Offered By Announcement Only
A discussion of selected topics in modern philosophy from Hobbes and Descartes to Kant.

PHI676 Idealism
3 credits Offered By Announcement Only
An examination of Idealism, both contemporary and historical.
PREREQUISITE: GRADUATE STANDING

PHI682 The Origins of Contemporary Continental and Analytic Philosophy
3 credits Offered By Announcement Only
A study of selected topics in the philosophical tradition originating from Franz Brentano and his contemporaries and students.

PHI691 Seminar in Special Topics
3 credits Offered By Announcement Only
A selected philosopher or philosophical problem. May be repeated for credit.

PHI692 Seminar in Special Topics
3 credits Offered By Announcement Only
A selected philosopher or philosophical problem. May be repeated for credit.

PHI694 Independent Study in Philosophy
1-3 credits Offered By Announcement Only
Directed reading on a topic or philosopher. May be repeated for credit.

PHI710 Master’s Thesis
1-6 credits Fall & Spring Semester
The student working on his/her master’s thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.
PHI730 Doctoral Dissertation
1-12 credits Fall & Spring Semester
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor, but for not less than a total of 12 hours. Up to 12 hours may be taken in a regular semester, but not more than six in a summer session.

PHI740 Post-candidacy doctoral dissertation
1-6 credits Fall & Spring Semester
Required of all candidates for the Ph.D. who have advanced to candidacy. The student will enroll for credit as determined by his/her advisor, but not for less than a total of 12. Not more than 12 hours of PHI 740 may be taken in a regular semester, nor more than six in a summer session.

PHI750 Research in Residence
0 credit Fall & Spring Semester
Used to establish research in residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

PHYSICS

PHY500 Research
1-3 credits Offered By Announcement Only
Project course introducing methods of research, individual investigation of current problems.

PHY505 Advanced Laboratory
1-2 credits Fall Semester
Advanced experiments such as properties of the electron, optical spectra, electrical measurements, radioactive decay, absorption, etc.
PREREQUISITE: PHY 208. PREREQUISITE OR COREQUISITE: PHY 360.

PHY506 Advanced Laboratory
1-2 credits Spring Semester
Advanced experiments such as properties of the electron, optical spectra, electrical measurements, radioactive decay, absorption, etc.
PREREQUISITE: PHY 208. PREREQUISITE OR COREQUISITE: PHY 360.

PHY515 Mathematical Techniques in Physics
3 credits Spring Semester
Complex variables and applications. Infinite series and their uses, particularly in differential equations. Multiple integrals and Fourier series.
PREREQUISITE: PHY 206, 207; MTH 311, AND 310 OR 312.

PHY516 Readings in Physics
1-3 credits Fall & Spring Semester
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

PHY517 Readings in Physics
1-3 credits Spring Semester
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.
COLLEGE OF ARTS AND SCIENCES  

PHYSICS

PHY518 Readings in Physics
1-3 credits Offered By Announcement Only
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

PHY520 Solid State Physics
3 credits Offered By Announcement Only
Crystal structure, quantum theory of the electronic structure of solids, mechanical, electric, magnetic and optical properties of solids. PREREQUISITE: PHY 560.

PHY530 Plasma Physics I
3 credits Offered By Announcement Only
Kinetic theory of plasmas, adiabatic motion of charged particles magnetofluid dynamics, transport properties of plasmas in electromagnetic fields. PREREQUISITE: PHY 340, 351, 360.

PHY540 Classical Mechanics II
3 credits Fall Semester
Lagrangian formulation, rigid body dynamics. Topics selected from fluid dynamics, non-linear oscillations, normal modes, phase plane analysis. PREREQUISITE: PHY 340.

PHY545 Introduction to Astrophysics
3 credits Offered By Announcement Only
Celestial mechanics, solar models, galaxies, distance scales, instruments. PREREQUISITE: PHY 360 AND ANOTHER 3 CREDIT 300 LEVEL PHYSICS COURSE.

PHY552 Optical Physics
3 credits Offered By Announcement Only
Geometric optics, interference and diffraction, polarized light, optical pumping, coherence phenomena, applications to modern physical research. PREREQUISITE: PHY 351, 360.

PHY560 Quantum Mechanics and Modern Physics I
3 credits Fall Semester
Introductory theory with applications to simple systems. Perturbation theory and atomic structure. PREREQUISITE: PREREQUISITE OR COREQUISITE: PHY 350.

PHY561 Quantum Mechanics and Modern Physics II
3 credits Spring Semester
Applications of quantum mechanics to atomic and molecular spectroscopy, quantum statistical mechanics, and nuclear physics. PREREQUISITE: PHY 560.

PHY601 Condensed Matter Physics Seminar
1 credit Fall & Spring Semester

PHY602 Optical Physics Seminar
1 credit Fall & Spring Semester

PHY603 Particle Physics Seminar
1 credit Offered By Announcement Only
PHY604 Plasma Physics Seminar
1 credit Offered By Announcement Only

PHY610 Special Topics in Physics
1-3 credits Offered By Announcement Only
Topics are typically selected from fluid dynamics, applied mathematics, particle theory, nuclear physics.

PHY611 Special Topics in Physics
1-3 credits Offered By Announcement Only
Topics are typically selected from fluid dynamics, applied mathematics, particle theory, nuclear physics.

PHY612 Special Topics in Physics
1-3 credits Offered By Announcement Only
Topics are typically selected from fluid dynamics, applied mathematics, particle theory, nuclear physics.

PHY615 Methods of Mathematical Physics I
3 credits Offered By Announcement Only
A continuation of PHY 515.
PREREQUISITE: PHY 515.

PHY616 Methods of Mathematical Physics II
3 credits Offered By Announcement Only
A continuation of PHY 515. Different topics from PHY 615.
PREREQUISITE: PHY 515.

PHY620 Advanced Solid State Physics
3 credits Offered By Announcement Only
Electronic structure, electron-electron interactions, phonons, many-body problems, transport properties, magnetism, superconductivity.
PREREQUISITE: PHY 520, 560.

PHY623 Statistical Mechanics I
3 credits Offered By Announcement Only
Equilibrium state, irreversibility, statistical description of an ensemble, entropy, partition functions.
PREREQUISITE: PHY 321, 561.

PHY624 Statistical Mechanics II
3 credits Offered By Announcement Only
Statistical description of many body problems, specific heats, Brownian motion in liquids and fields, nonequilibrium states, super-conductivity.
PREREQUISITE: PHY 623.

PHY630 Plasma Physics II
3 credits Offered By Announcement Only
Plasmas oscillations and waves, interaction of electromagnetic waves, with plasmas in magnetic fields, plasma turbulence, beam-plasma interactions, methods of experimental investigation.
PREREQUISITE: PHY 530.
PHY650 Electromagnetic Theory 1
3 credits Offered By Announcement Only
Electrostatics, magnetostatics, Maxwell's equations, continuous media, waves, antennas, resonant cavities, wave guides.
PREREQUISITE: PHY 351, 515.

PHY651 Electromagnetic Theory II
3 credits Offered By Announcement Only
Relativistic effects, interaction of radiation with matter, multipole radiation, radiation reaction.
PREREQUISITE: PHY 650.

PHY654 General Relativity Theory
3 credits Offered By Announcement Only
Einstein's theory of gravitation. Includes basic differential geometry and tensor analysis, the Einstein field equations, the motion of particles in gravitational fields, tests of general relativity, black holes, and cosmology.

PHY666 Elementary Particles
3 credits Offered By Announcement Only
The Standard Model of elementary particles. Classical theory of fields for spin 0, 1/2, 1; Feynman rules. The Standard Model Lagrangian is postulated, and some of its basic consequences are explored.
PREREQUISITE: PHY 540, 561, 650.

PHY670 Quantum Theory I
3 credits Offered By Announcement Only
Transformation theory, linear operators and vector spaces. Schrodinger's equation, rotation group and angular momentum, statistics (Bose-Einstein and Fermi-Dirac), isotopic spin, multiplet structure of levels, approximation methods.
PREREQUISITE: PHY 540, 561, 615.

PHY671 Quantum Theory II
3 credits Offered By Announcement Only
One particle relativistic theory; Lorentz group; symmetries of particles; elementary scattering theory; many body problems; Greens's function techniques; S-matrix.
PREREQUISITE: PHY 670.

PHY672 Quantum Field Theory
3 credits Offered By Announcement Only
Canonical and path-integral quantization; renormalization; gauge theories.
PREREQUISITE: PHY 540, 651, 671.

PHY680 Directed Readings or Research
1-4 credits Fall & Spring Semester

PHY710 Master's Thesis
1-6 credits Offered By Announcement Only
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.
PHY720 Research in Residence
0 credit
Offered By Announcement Only
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in PHY 710 (usually six credits). Credit not granted. May be regarded as full-time residence.

PHY725 Continuous Registration--Master's Study
0 credit
Offered By Announcement Only
To establish residence for non-thesis master's students who are preparing for major examinations. Credit not granted. Regarded as full-time residence.

PHY730 Pre-Candidacy Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor, but not for less than a total of 12. Not more than 12 hours of PHY 730 may be taken in a regular semester, nor more than six in a summer session.

PHY740 Post-Candidacy Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. who have advanced to candidacy. The student will enroll for credit as determined by his/her advisor, but not for less than a total of 12. Not more than 12 hours of PHY 740 may be taken in a regular semester, nor more than six in a summer session.
PREREQUISITE: ADMISSION TO CANDIDACY FOR PHD

PHY750 Research in Residence
0 credit  Fall & Spring Semester
Used to establish research in residence for the Ph.D. and D.A., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

POLITICAL SCIENCE

POL501 Budget and Financial Management and Administration
3 credits  Spring Semester
Role of the budget in shaping public policy; managing public revenues; budgetary theory, politics, and fiscal management. Examples from state, municipal and federal governments.
PREREQUISITE: ADVANCED UNDERGRADUATE OR GRADUATE STANDING AND PERMISSION OF INSTRUCTOR.

POL510 Political Analysis
3 credits  Fall Semester
Introduction to the tools used to investigate empirical questions relevant to politics, policy and public administration. Students apply statistical concepts to contemporary social phenomena. Examines the impact of minority-majority redistricting, the fairness of the butterfly ballot, and the sources of political realignment.
PREREQUISITE: POL 201 OR POL 202 OR POL 203 OR POL 380 OR GRADUATE STANDING

POL512 Advanced Political Analysis
3 credits  Offered By Announcement Only
This course teaches students how to do social science research using the applied techniques of statistics and case study analysis while exposing them to research in the leading sub-fields of political science. Students will produce an original paper that evaluates an academic question using empirical social science evidence.
PREREQUISITE: POL 380 OR POL 510
POL513 Models of Politics
3 credits
Hands-on examination of the process by which quantitative and qualitative models are constructed in political science. The course focuses on the creative aspect of model building and diverse forms of theory construction.
PREREQUISITE: POL 201, POL 202, OR POL 203

POL515 Media Content Analysis
3 credits
Fall Semester
There are few facets of our lives which are not directly affected by media content. From cell phones to televisions, the media is with us all the time. But what messages are contained in the mass media? What methods can we employ to study media content scientifically? This course will explore methods of analyzing media sources including movies, newspapers, magazines, and television. Course topics will include political bias, campaign coverage, and news content. Students will design their own projects and implement their own coding strategies.
PREREQUISITE: FOR POLITICAL SCIENCE MAJORS: POL 201. FOR NON-POLITICAL SCIENCE MAJORS, JUNIOR, SENIOR, OR GRADUATE STUDENT STANDING.

POL520 Internship
3 credits
Fall & Spring Semester & First & Second Summer Session
Provides advanced political science majors with an opportunity to participate in a structured, supervised internship. 25-35 page research paper required.
PREREQUISITE: JUNIOR OR SENIOR STANDING; OPEN TO POLITICAL SCIENCE MAJORS ONLY, WITH MINIMUM GPA OF 3.5 IN THE MAJOR, 3.3 OVERALL; PERMISSION OF SUPERVISING INSTRUCTOR AND DEPARTMENT CHAIR.

POL521 Public Affairs Internship
3 credits
Fall & Spring Semester & First & Second Summer Session
Opportunity for the advanced student specializing in public administration to participate in an administrative capacity in an agency of state or local government. Periodic conferences with adviser and paper required.
PREREQUISITE: JUNIOR OR SENIOR STANDING; OPEN TO POLITICAL SCIENCE MAJORS ONLY. NEED MINIMUM GPA OF 3.5 IN THE MAJOR, 3.3 GPA OVERALL. PERMISSION OF SUPERVISING INSTRUCTOR AND DEPARTMENT CHAIR.

POL522 Introduction to Graduate Public Administration
3 credits
Fall & Spring Semester
Introduction to concepts, issues, problems, theories and process in the field of public administration and/or public management.
PREREQUISITE: ADVANCED UNDERGRADUATE OR GRADUATE STANDING AND PERMISSION OF INSTRUCTOR.

POL523 Problems in Public and Non-Profit Management
3 credits
Offered By Announcement Only
Nature of the power vested in administrative bodies and problems involved in management procedures. Special emphasis on local or non-profit administration.
PREREQUISITE: ADVANCED UNDERGRADUATE OR GRADUATE STANDING. PERMISSION OF INSTRUCTOR.
POL524 Non-Profit Organizations: Law, Policy, and Management
3 credits
Fall Semester
This course teaches students the essential requirements for creation and operation of tax-exempt nonprofit organization in accordance with state and federal law. The course covers a wide range of relevant topics including guidelines for charitable giving and charitable solicitation, pitfalls that can result in personal liability for officers and directors, and statutory constraints on legislative lobbying and political activities.
PREREQUISITE: JUNIOR OR SENIOR STATUS, GRADUATE STANDING, OR PERMISSION OF THE INSTRUCTOR

POL525 Comparative Public Policy and Administration
3 credits
Offered By Announcement Only
Comparison and analysis of the organizational and managerial policy problems of developed and developing nations. The administrative process will be considered within the institutional and cultural framework of each nation. Case studies will be used to focus on transition from traditional to modern techniques of public management.
PREREQUISITE: POL 202

POL526 Administrative Law
3 credits
Fall Semester
Administrative law is the study of the legal relationship of government agencies to legislatures, courts, and private parties. The course examines the legal dimensions of bureaucratic power and procedures as well as constitutional and statutory constraints on regulators and administrators. Topics include rulemaking, adjudication, investigation and enforcement, political controls on agencies, judicial review of agency decisions, governmental liability and immunity, public records and open meetings laws. Both federal law and Florida law are covered. The course assumes a basic knowledge of the American legal system, constitutional law and bureaucracy.
PREREQUISITE: FOR POLITICAL SCIENCE MAJORS: POL 201 AND POL 321. FOR NON-POLITICAL SCIENCE MAJORS, JUNIOR, SENIOR, OR GRADUATE STANDING.

POL528 Advanced Seminar on Electoral Behavior
3 credits
Offered By Announcement Only
This seminar examines the opinions that Americans have and how those opinions are expressed through participation in elections. At the end of the semester we will also examine other forms of political participation (e.g., interest groups).
PREREQUISITE: POL 201.

POL529 Voting in the US: Access, Fairness, and Reform
3 credits
Fall Semester
Fair and free democratic elections are the heart of US democracy. This course will examine who gets to vote, whether election laws and rules are fair (and fairly implemented), and proposals to reform the way elections are run.
PREREQUISITE: POL 201
POL530 Intelligence and National Security Decision Making

3 credits Offered By Announcement Only
This course will study the US national security community structure and decision making process. The course will look at the National Security Council, the principal national security agencies (such as the CIA, Defense Department, and State Department), how they interact, and their roles in devising and executing policy. We will also examine the role and function of senior policy decision makers such as the President. We will study recent policy challenges such as Iraq and Afghanistan as examples of National Security policy.
PREREQUISITE: POL 201 AND POL 203

POL531 Global Environmental Politics

3 credits Offered By Announcement Only
Examination of the environment within the context of economic globalization. Contrasts the international trading regime and those regimes designed to protect the environment, with specific attention to the issues of global warming and bio-diversity.
PREREQUISITE: POL 203

POL535 Comparative Legal Systems

3 credits Fall & Spring Semester
Considers the institutional and political roles of Courts from a comparative perspective. With a focus on judicial independence and judicial review, will consider the juridical systems of a variety of countries and regions including the US, the EU, Germany, France, Great Britain, Chile, Argentina, Russia, The Asian-Pacific Rim, South Africa, Israel, Central America and the Middle East.
PREREQUISITE: POL 202 OR GRADUATE STANDING.

POL536 U.S. Health Care Crisis: Politics and Policies

3 credits Spring Semester
This seminar will explore the politics and policies of healthcare in the United States. Our examination of the current crisis in cost and coverage will draw on experience from the debates on comprehensive and incremental reform over the past decade. In addition, we will explore the politics and policies of other health and science issues. Students will be expected to attend every class and be actively involved in class discussions. There will be two examinations, one at mid-term and a final based on readings and course discussions.
PREREQUISITE: JUNIORS AND SENIORS ONLY (JUNIORS MUST HAVE JUNIOR STANDING THE SEMESTER THEY TAKE THE CLASS.)

POL541 Philosophy of Law

3 credits Offered By Announcement Only
Case-based study of jurisprudence designed to illuminate and explain philosophies of law. Examination of theories of free expression; bioethical matters; theories of punishment and legal responsibility; and the placement of religious discourses in liberal systems of law. Special attention to cases involving fundamental rights and liberties; the role of the individual and the state in civil society; and the capacities of individual to be legally competent in contemporary systems of law.
PREREQUISITE: POL 201, 212 OR POL 203 OR GRADUATE STANDING.
POL543 Urban Politics
3 credits
Offered By Announcement Only
Examination of sources of political power in urban areas and how they influence the policies pursued in those areas. Analysis of the role of economic power, protest actions, neighborhood groups, and voting to evaluate whether there is a bias in urban politics that systematically favors some groups over other and, if so, how likely it is that the bias can be overcome.
PREREQUISITE: POL 201 OR GRADUATE STANDING.

POL544 Chinese Foreign Policy
3 credits
Fall Semester
PREREQUISITE: POL 203

POL545 Environmental Policymaking
3 credits
Spring Semester
Examination of different ethical approaches to the environment; the federal government's management of natural resources; selected environmental policies; international environmental policy issues. Topics include federal management of national grazing lands, national forests, and minerals in the public domain. Analyzes environmental policies such as air, water, toxic wastes, energy, and environmentally-related issues in international trade and national security.
PREREQUISITE: POL 201 OR POL 203

POL547 Congressional Representation
3 credits
Not Offered; Transfer Credit Only
This course examines how and when citizens influence legislators' behavior. More specifically, we examine how legislators' floor behavior reflects citizens' preferences and how these preferences influence the manner in which legislators build electoral coalitions.
PREREQUISITE: POL 201

POL548 Civic Participation and Democracy
3 credits
Fall Semester
Citizens participate in the governing process by communicating their preferences and pressuring the government to respond. In this course we examine these various mechanisms of "civic participation", and discuss the meaning and consequences of participatory democracy. The course focuses on the contemporary United States, but we will devote some time to discuss civic participation in other countries as well.
PREREQUISITE: POL 201

POL550 Advanced Seminar on American Politics
3 credits
Fall Semester
This seminar provides students with a survey of significant research on major topics in American Politics. We will read influential works of the past, as well as recent cutting-edge research. Particular attention will be paid to discussing the methods and theories used in the research we will read. The purpose of the course is to acquaint students with the literature on American Politics, while also providing an opportunity for students to develop skills in critically assessing and skillfully conducting social science research.
PREREQUISITE: POL 201
POL551 Productivity in the Public and Non-Profit Sectors
3 credits  First Summer Session
Definitions and measures of productivity. Evaluation of government programs, and
methods of productivity improvement.
PREREQUISITE: POL 201

POL553 The Environmental Movement: Groups, Beliefs and Values
3 credits  Fall Semester
Exploration of the origins and political impact of environmentalism in the United
States and, to a lesser extent, in the global context. Impact of democratic participation
on environmental politics.
PREREQUISITE: POL 201

POL555 Total Quality Public Service Management: Achieving High Performance Government
3 credits  Fall Semester
Examination of the theory and practice of Total Quality Management (TQM) in the
government and non-profit sector. Focuses on budgetary, customer service, employee
and process improvements that facilitate increased public and non-profit performance.
Special emphasis to TQM's contribution to improved service delivery.
PREREQUISITE: POL 201

POL556 Politics and Ethics
3 credits  Offered By Announcement Only
Personal, professional, organizational, and societal levels of ethical analysis.
Ethical theories will be reviewed and applied to actual cases that focus on public
policy and/or the officials who create and implement it. Profiles of moral exemplars
in public life will be examined.
PREREQUISITE: POL 201 OR GRADUATE STANDING

POL557 Ethical and Managerial Issues in Government, Business and Non-Profit Organizati
3 credits  Offered By Announcement Only
Governments at all levels in this country-national (Larry Craig, David Vitter,
Mark Foley, Bill Clinton, Randy Cunnigham, Tom DeLay, William Jefferson, James
Traficant, Robert Torricelli, Jack Abramoff), state (former Illinois, Louisiana,
New York, Ohio and Arizona governors), and local (Miami, Providence city officials;
Miami-Dade, Broward, and Palm Beach counties) have encounter scandals involving
ethical wrongdoing. Business (Enron, Worldcom) and nonprofit organizations (Boy
Scouts, United Way) have faced similar problems. Countless less visible examples
of unethical and ethical behavior occur in organizations daily. This course examines
the causes and consequences of such actions and the managerial strategies and competencies
needed to effectively cope with the ethical issues confronting individuals and
organizations.
PREREQUISITE: POL 201 OR GRADUATE STANDING

POL558 From Electronic Government to Digital Governance
3 credits  Fall Semester
Explores the transition from electronic government to digital governance, emphasizing
citizen participation and citizen-centric public administration; examines the economic
and political consequences of new information technologies; studies the shift from
bureaucracy-centered to customer-centric service orientation as a means to reduce
costs, restore public trust, and improve service quality.
PREREQUISITE: POL 201
POL563 Senior Thesis
3 credits  Fall Semester
General reading, preparation of research design and collection of information for senior thesis.
PREREQUISITE: ADMISSION BY APPLICATION ONLY. SEE THE DIRECTOR OF UNDERGRADUATE STUDIES FOR DETAILS.

POL564 Senior Thesis II
3 credits  Spring Semester
Continuation of POL 563: writing and defense of the theses.
PREREQUISITE: ADMISSION BY APPLICATION ONLY. SEE THE DIRECTOR OF UNDERGRADUATE STUDIES FOR DETAILS.

POL570 Uniting States in International Perspective
3 credits  Fall Semester
How states form and fragment; The main actors in nation formation; the elements of continuity and change; the impact outsiders can have on the process.
PREREQUISITE: POL 211 AND POL 212

POL577 Security in South Asia: The Conflicts of Afghanistan, Pakistan and India
3 credits  Fall & Spring Semester
The security system of South Asia's northern reaches and the current conflict involving Afghanistan, Pakistan, and India: considerations of sovereignty and the role of frontiers in world politics.
PREREQUISITE: POL 203

POL578 Energy and Security in the Caspian and Black Sea Regions
3 credits  Fall & Spring Semester
The intersection of energy and security within the contested geopolitical and geocultural space of the Caspian and Black Sea basins. It is concerned with these two, interconnected, sub-regions for what they tell us about ideas and acts, identities and interests, in a notoriously fluid period in international politics.
PREREQUISITE: POL 203

POL579 The politics of post-communist transactions
3 credits  Fall Semester
Examination of the creation, breakdown, and aftermath of communist governments in Eastern Europe and the USSR. Develops a theoretical framework for understanding cross-national patterns of post-communist development in the context of country-specific experiences.
PREREQUISITE: POL 202

POL580 Ethnicity, Nationalism and Secession
3 credits  Spring Semester
Examination of the creation, breakdown, and aftermath of communist governments in Eastern Europe and the Soviet Union. Using empirical evidence from four case studies, develops a theoretical framework for understanding cross-national patterns of post-communist development in the context of country-specific experiences.
PREREQUISITE: POL 202 OR POL 203
POL581 Comparative Political Economy of Post-Industrial Democracies
3 credits  Fall Semester
This seminar examines four key turning points in the development of capitalism: the industrial revolution, the aftermath of the depression and world wars, the oil crisis of the 1970's, and today's "globalization". We will compare the relationships between government and the economy in Western Europe, Canada, the U.S., Australia, New Zealand, and Japan in each period, and attempt to evaluate why these countries react similarly or differently to identical changes in world economy.
PREREQUISITE: POL 202

POL582 Political Economy of Development
3 credits  Offered By Announcement Only
Overview of the principal theoretical paradigms of the development process Comparative analysis of issues such as the role of the state, strategies of industrialization, changes in social structure, basic needs and the trade-offs between growth and equity.
PREREQUISITE: POL 202 OR GRADUATE STANDING.

POL584 Contemporary Latin American Politics
3 credits  Fall & Spring Semester
This course assumes a basic knowledge of Latin American politics, and is designed to foster deeper understanding of political processes in the region and to provide an overview of key debates among political scientists specializing in Latin America. We discuss issues related to democratic consolidation, political participation, representation and governance.
PREREQUISITE: POL202, POL 385 IS STRONGLY RECOMMENDED

POL586 Conflict in the Middle East and Africa
3 credits  Fall Semester
Introduction to major paradigms for the explanation of war and conflict in two of the most unstable regions of the world. Reading and class discussions on select cases of current and past conflicts in each region in order to discern patterns of conflict within and across regions, gain a clearer understanding of what drives violent conflict, and assess strategies of resolution.
PREREQUISITE: POL 203.

POL588 Politics in China
3 credits  Spring Semester
Development and nature of Chinese domestic politics in theory and practice; problems of political stability and conflict; the role of historical and cultural traditions, institutions, social, economic and personality factors in Chinese politics; process of change and problems of leadership succession; the significance of changes in the character and style of Chinese leadership.
PREREQUISITE: POL 202 OR HIS 121 OR HIS 122 OR GRADUATE STANDING.

POL591 International Security
3 credits  Offered By Announcement Only
Analysis and evaluation of approaches to international conflict, resolution, reduction and stabilization such as international organization, law, collective security, balance of power, functionalism, world government, morality, and conscience. Special emphasis on recent problems and efforts at institutionalizing social control.
PREREQUISITE: POL 203 OR GRADUATE STANDING.
POL592 International Political Economy
3 credits
Offered By Announcement Only
This course provides an analysis of the changing trade and financial structures of the international economy and the differing approaches that developed and developing states have taken in adapting to them. Special emphasis will be placed on the political implications of economic strategies, the challenges and opportunities posed by the increasingly free mobility of capital and goods across borders, and the ability of states to shape domestic economic outcomes.
PREREQUISITE: POL 203

POL593 International Relations of the Middle East
3 credits
Offered By Announcement Only
Regional and interregional analysis of the foreign relations of Middle Eastern nations, domestic and geopolitical factors.
PREREQUISITE: POL 203, 387 OR GRADUATE STANDING.

POL599 Special Topics
1-3 credits
Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: POL 201, POL 202 OR 203

POL601 Seminar in Political Theory
3 credits
Offered By Announcement Only

POL602 Seminar in Public Law
3 credits
Offered By Announcement Only

POL603 Seminar in the Political Process
3 credits
Offered By Announcement Only

POL604 Seminar in International Law and Relations
3 credits
Offered By Announcement Only

POL605 Seminar in Comparative Government
3 credits
Offered By Announcement Only

POL606 Seminar in Administration
3 credits
Spring Semester
Examination of theory and behavior in public and nonprofit organizations. Focus on the importance of understanding the behavior, motivations, and actions of individuals in public service and on the distinctiveness of management and leadership in public organizations.

POL607 Seminar in U.S. Government
3 credits
Offered By Announcement Only

POL621 Group Structure, Group Process and Organizational Change in Criminal
3 credits
Offered By Announcement Only
Measurement of the institutional climate of criminal justice institutions, strategies for change; relationships between the organizational structure and outcomes.
POL643 Seminar on Urban Development Policy
3 credits  Offered By Announcement Only
The course will employ a problem approach to selected policy issues, ranging from interdisciplinary theories of urbanization in conjunction with politico-educational to scientific-technological developments. Consideration will be given to appropriate research techniques, field work and case studies of public action for guiding urban development, including intergovernmental relations and national urban policy.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

POL644 Seminar on Urban Development Policy
3 credits  Offered By Announcement Only
Continuation of POL 643.
PREREQUISITE: POL 643 OR PERMISSION OF INSTRUCTOR.

POL646 Public Policy Analysis and Administration
3 credits  Spring Semester
Examination of public policy issue areas including education, health, welfare, urban mass transit. Limits to effectiveness of federal, state and local governments in providing services. Techniques for analyzing the effectiveness of public policies; research techniques for the assessment of future policy alternatives.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

POL647 Personnel Administration
3 credits  Fall Semester
Modern personnel administration: job analysis and design, evaluation and appraisal, recruitment and interviewing, training and development, wages and benefits, and health and safety. Unionization, regulation of wages, hours and working conditions, financial security for workers, and job anti-discrimination legislation. Manpower planning.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

POL648 Community Participation and Organization
3 credits  Offered By Announcement Only
Examination of citizen participation in administrative affairs of governmental organizations and its impact on the efficiency of public agencies.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

POL652 Public Sector Collective Bargaining and Labor-Management Relations
3 credits  Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR.

POL653 Seminar in Public Sector Personnel Problems
3 credits  Offered By Announcement Only
Human resource planning, performance, evaluation, recruitment and staffing, training and development, motivation, and personnel management. A workshop utilizing simulation, games, role playing and other skill building devices.
PREREQUISITE: MGT 602 AND PERMISSION OF INSTRUCTOR.
COLLEGE OF ARTS AND SCIENCES
POLITICAL SCIENCE

POL655 Public Policy and Health
3 credits First Summer Session
Development of public policy at the federal, state and local level. Policy process, models of policy analysis, policy development in several government service areas, and plans for policy change. Special emphasis on health policy formulation, implementation and the use of epidemiological tools in health policy analysis.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

POL656 Public Service Internship
3-6 credits Fall & Spring Semester & First & Second Summer Session
Individual on-the-job work experience; arranged and monitored by a faculty member.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

POL671 Political Environment of Business
3 credits Fall & Spring Semester & First & Second Summer Session
Examines government-business-society relations with emphasis on the social, economic, political, technological, ethical, and ecological environment.

POL672 Program Planning, Research and Evaluation in Criminal Justice and Corrections,
3 credits Offered By Announcement Only
Identification of long-term goals and intermediate objectives in the criminal justice process. Formulation of operations, evaluation techniques and the relationships among research, evaluation and management decisions.
PREREQUISITE: GRADUATE STANDING.

POL673 Program Planning, Research and Evaluation in Criminal Justice and Corrections,
3 credits Offered By Announcement Only
Continuation of POL 672. Topics include types of evaluation and the design of evaluative studies. POL 672 and POL 673 are designed to facilitate the formulation and execution of a thesis.
PREREQUISITE: POL 672 OR PERMISSION OF INSTRUCTOR.

POL681 Seminar: Political Dynamics in Communist China
3 credits Offered By Announcement Only

POL683 Seminar: Topics in the Comparative Study of the Foreign Policy of China
3 credits Offered By Announcement Only

POL685 Seminar in the Dynamics of Soviet Society
3 credits Offered By Announcement Only
Forces and factors that shape and continue to influence the development of social, political and economic institutions in the Former Soviet Union and their evolving role in decision making.

POL690 Topics in Urban Studies
3 credits Offered By Announcement Only

POL699 Directed Readings
1-3 credits Fall & Spring Semester & First & Second Summer Session

POL710 Master's Thesis
3 credits Offered By Announcement Only
Designed for student working on masters' theses. Not to exceed six credit hours, as determined by student's advisor. Credit is not awarded until the thesis has been accepted.
POL720 Research in Residence
0 credit  Offered By Announcement Only
Research in residence for thesis or master's degree after the student has enrolled for the permissible cumulative total in POL 710 (usually six credits). Credit not granted; regarded as full time residence.

PORTUGUESE

POR591 Directed Readings in Portuguese
1-3 credits  Offered By Announcement Only
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

POR592 Directed Readings in Portuguese
1-3 credits  Offered By Announcement Only
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

POR593 Directed Readings in Portuguese
1-3 credits  Offered By Announcement Only
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

POR625 Portuguese for Graduate Research
0 credit  Offered By Announcement Only
Grammatical structuring, verb tenses, and word families necessary for reading text with minimal use of a dictionary. May fulfill the Foreign Language Reading Competency Requirement (consult your graduate advisor).

POR635 Portuguese Language Skills for Graduate Studies
3 credits  Fall Semester
Portuguese 635 is designed to enhance graduate student's communication skills in the Portuguese language, at the low advanced level of proficiency. It is intended principally for those students who will be carrying out research in areas related to the Lusophone world.
PREREQUISITE: PREVIOUS STUDY/KNOWLEDGE OF PORTUGUESE AT THE BASIC LEVEL

PSYCHOLOGY

PSY501 History and Systems of Psychology
3 credits  Offered By Announcement Only
Development of psychology as a science.
PREREQUISITE: 12 CREDITS IN PSYCHOLOGY.

PSY502 Culture, Values, Religiosity, and Mental Illness
3 credits  Offered By Announcement Only
Cultural differences in the manifestation, course, and outcome of serious mental disorders; the relationship between chronic mental disorders and ethnicity, religious values, family cohesion, attributions of control, and world view; cultural differences in societies' reactions to and treatment of mentally ill patients.
PREREQUISITE: PSY 110; 316; 352.

PSY590 Special Topics
1-3 credits  Offered By Announcement Only
PREREQUISITE: SENIOR UNDERGRADUATE OR GRADUATE STUDENT STATUS OR PERMISSION OF DIRECTOR OF UNDERGRADUATE STUDIES.

PSY600 Sensory Processes
3 credits  Offered By Announcement Only
Mechanisms of vertebrate sensation, with emphasis on the structure and function of the peripheral organs. Lecture, 2 hours; laboratory, 2 hours.
PREREQUISITE: GRADUATE STANDING.
PSY601 Issues in Professional Development and Research.
1 credit  Fall Semester
Seminar addressing issues such as structure of academic systems and progress through them, time management, library search systems, professional journals, how to structure curriculum vitae, procedures and rules in human subject research, professional meetings and presentations, extramural funding opportunities, professional writing style, ethical issues.
PREREQUISITE: GRADUATE STANDING IN PSYCHOLOGY.

PSY602 Scientific writing and grantsmanship
3 credits  Offered By Announcement Only
Writing and organizational skills for professional development in social and behavioral sciences. Mechanism of extramural funding and grant review, including grantsmanship.
PREREQUISITE: GRADUATE STANDING.

PSY603 NEUROANATOMY
3 credits  Fall Semester
PREREQUISITE: GRADUATE STANDING

PSY604 Cognition and Emotion
3 credits  Spring Semester
Study of basic cognitive processes of attention and memory, the function of emotions, and the role of cognitive mechanisms in the processing of affective information.

PSY605 Cognitive Neuroscience
3 credits  Fall Semester
Brain mechanisms in cognition and behavior, including sensory encoding and perception, attention, motivation, emotion, learning/memory, language, executive functions, and mental disorders.
PREREQUISITE: GRADUATE STANDING.

PSY606 Biobehavioral Processes and Disease in Health Psychology
3 credits  Spring Semester
Psychological and behavioral processes on health, well-being, and disease. Basic mechanisms of physiological regulation and dysregulation of cardiovascular, endocrine, and immune systems with specific reference to issues in cardiovascular behavioral medicine and psychoneuroimmunology.
PREREQUISITE: PSY 610

PSY607 Neurosciences I: Neuronal Mechanisms
3 credits  Offered By Announcement Only
Biophysical, biochemical and morphological approaches at the cellular level to nervous integration as a basis for behavior. Lecture, 3 hours.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
PSY608 Neurosciences II: Nervous System Integration
3 credits
Offered By Announcement Only
Survey of neural control mechanisms underlying behavior. Organization and synaptic connections of specific invertebrate, brain and spinal cord control systems using neurohistological, neurophysiological and neuro-pharmacological procedures.
PREREQUISITE: BIL 660 OR PSY 607 OR PERMISSION OF INSTRUCTOR.

PSY609 Psychopharmacology
3 credits
Offered By Announcement Only
Basic methods and current issues in psychopharmacology.
PREREQUISITE: PSY 605 OR PERMISSION OF INSTRUCTOR.

PSY610 Behavioral Medicine: Overview of Basic Science, Public Health & Clinical Trial
3 credits
Fall Semester
Psychological factors in the etiology, pathogenesis, diagnosis, prevention and treatment of physical disorders.

PSY611 Social Psychology of Health and Illness
3 credits
Offered By Announcement Only
Topics in behavioral medicine, including social and personality factors affecting disease susceptibility, health related beliefs and behaviors; the doctor-patient relationship; evaluation of health care systems and patient compliance.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

PSY612 Stress, Emotions, and Motivation
3 credits
Spring Semester
PREREQUISITE: PSY 605 OR EQUIVALENT.

PSY613 Psychoneuroimmunology
3 credits
Spring Semester
Structural and functional aspects of the immune system that are sensitive to neural and psychological processes. Interactions between the nervous and immune systems are examined in relation to empirical associations between psychological factors (i.e., stress) and immune-mediated processes in diseases such as cancer and AIDS.
PREREQUISITE: PSY 605 OR PERMISSION OF INSTRUCTOR.

PSY614 Diversity issues in psychology
3 credits
Spring Semester
Overview of diversity issues including race, religion, gender, age, sexual orientation, physical disability and socioeconomic status as they relate to psychological research and clinical practice.
PREREQUISITE: GRADUATE STANDING.

PSY615 Foundations of neuropsychology
3 credits
Spring Semester
Mechanisms of neurological and psychiatric disorders, including developmental disorders, dementia, aphasia, amnesia, stroke, traumatic brain injury, and loss of general intelligence. Clinical tools for neuropsychological assessment, forensics, and genetic screening.
PREREQUISITE: GRADUATE STANDING

PSY616 Biobehavioral Processes and Clinical Research Applications in Health Psychology
3 credits
Fall Semester
PREREQUISITE: PSY 606, PSY 610
PSY620 Developmental Psychology
3 credits
Offered By Announcement Only
Emphasis on applied research and interventions.

PSY621 Theories of Development
3 credits
Fall Semester
Theoretical aspects of psychological development throughout the life span.
PREREQUISITE: PSY 620.

PSY622 Deviant Intellectual Development
3 credits
Offered By Announcement Only
Disorders of intellectual development: Mental retardation, learning problems, and language delays (etiology, epidemiology, and prognosis). Does not include clinical applications.

PSY623 Deviant Communicative Development
3 credits
Offered By Announcement Only
The nature of deviant acquisition of communication systems. Specific language and speech problems of developmentally disabled, sensorial impaired and physically handicapped children. Intervention methods utilizing traditional and nonverbal approaches.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF THE INSTRUCTOR.

PSY624 Atypical Social Development
3 credits
Spring Semester
The theoretical and empirical literature on social development in children with psychopathology, mental retardation, and/or those who have experienced trauma.
PREREQUISITE: PSY 620.

PSY625 Social Psychology
3 credits
Fall Semester
Overview of the major substantive areas and theories of social psychology. Emphasis on applications to health-related concerns.

PSY626 Social Influence Processes
3 credits
Offered By Announcement Only
The major elements reviewed are source, message and target. The various processes include persuasion threats, promises and activation of normative commitments. Sub-areas of social psychology included are conformity, leadership, propaganda, social conflicts, decision theory, and social power.
PREREQUISITE: PSY 625.

PSY627 Interpersonal Attraction
3 credits
Offered By Announcement Only
A review of theories, methods and empirical findings related to the study of interpersonal affiliation and affect.
PREREQUISITE: PSY 625.
PSY628 Theories of Personality
3 credits Offered By Announcement Only
A thorough comparative study of the major theoretical positions in the field of personality in terms of units of analysis, the structure of personality, the development of personality, the relation of personality to other fields of Psychology, the relation of personality to fields of knowledge outside psychology, (biology, sociology, anthropology) and the heuristic value of the theory.
PREREQUISITE: PSY 640.

PSY630 Research Methods in Psychology.
1-3 credits Fall Semester
Fundamentals of behavioral research including experimental, and non-experimental design, clinical trial methodology, measurement theory, and statistical methods.
Computer applications of univariate statistical techniques.
PREREQUISITE: PSY 631

PSY631 Psychological Statistics, Research Methods and Design
3 credits Fall Semester
Statistics for experimental design with uncorrelated independent variables. Review of t-tests; designs and applications of analysis of variance; including one-way, factorial, repeated-measures, and mixed designs; post hoc comparisons among means.
PREREQUISITE: PSY 630 OR PERMISSION OF INSTRUCTOR.

PSY632 Multiple Regression and Multivariate Statistics
3 credits Spring Semester
Techniques for the analysis of multiple quantitative measurements including multiple regression, multivariate analysis of variance, discriminant analysis and canonical correlation. Computer application of these techniques to the behavioral sciences.
PREREQUISITE: PSY 630 OR EPS 568 AND 653 OR PERMISSION OF INSTRUCTOR.

PSY633 Structural Equation Modeling
3 credits Fall Semester
Structural equation modeling. Specific and testing explicit theory based models of covariances among variables. Structural models, path analysis, measurement models, and confirmatory factor analysis, particularly related to hypotheses about causal relations, change over time, and comparisons across diverse populations.
PREREQUISITE: PSY 632.

PSY634 Hierarchical Linear Evaluation
3 credits Spring Semester
Hierarchical linear modeling. Multi-level modeling of nested and non-independent data. Application of multi-level modeling to social science and behavioral data, including computer laboratory exercises.
PREREQUISITE: PSY 632

PSY635 Data-Base Management Systems in the Psychological Sciences
3 credits Offered By Announcement Only
Management of large data sets in the psychological sciences, including evaluation research, clinical client data, epidemiological studies, demographic studies and laboratory research.
PREREQUISITE: GRADUATE STANDING IN PSYCHOLOGY OR PERMISSION OF THE INSTRUCTOR.
PSY636 Developmental Methodology
3 credits
Fall Semester
Concepts and research design problems for the analysis of developmental data from infancy through adolescence.
PREREQUISITE: PSY 620 OR EQUIVALENT.

PSY637 Methods in Social Psychology
3 credits
Offered By Announcement Only
Methodology of experimental research in social psychology, including problems of research setting, sampling, experimenter-subject relationships, and methods of collecting social psychological data. Lecture, seminar, and laboratory.
PREREQUISITE: PSY 625.

PSY638 Psychology of Infant Development
3 credits
Offered By Announcement Only
Theory, research, and methodology pertaining to psychological development in the first two years of life. Applied research on infancy as it pertains to individual differences in cognitive, social, and emotional development.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

PSY639 Psychology of Mental Retardation and Developmental Disabilities
3 credits
Offered By Announcement Only
Learning disabilities, autism and other developmental disabilities with an emphasis on mental retardation. Definitions, causal factors, societal attitudes and services from an historical perspective.

PSY640 Adult Psychopathology
3 credits
Fall Semester
Theories, models, history, and research relevant to various patterns of problematic behavior, with a focus on adults. The influences of family systems as well as cultural and other diversity factors (e.g., ethnicity, sexual orientation) are included.

PSY641 Child and Adolescent Psychopathology
3 credits
Fall Semester
Theories, models, and research relevant to the development and the course of behavioral disorders and other problems (e.g., maltreatment, exposure to violence and poverty) that emerge in childhood and adolescence. The influences of family and peer systems as well as cultural and other diversity factors (e.g., ethnicity, sexual orientation) are included.

PSY642 Advanced Adult Psychopathology
3 credits
Fall Semester
Theory and research on risk factors and etiological models of mental disorders. Socioenvironmental (cultural, social support, life events), psychological (temperament, cognitive biases), and biological (genes, neurotransmitters) models of risk, research methodology, and design are discussed.
PREREQUISITE: GRADUATE STANDING IN PSYCHOLOGY OR PERMISSION OF INSTRUCTOR.

PSY643 Behavioral Medicine and Developmental Disabilities
3 credits
Fall & Spring Semester
Processes influencing diagnosis and management of developmental disabilities: genetics, embryology/fetology, physical growth and development, nutrition, hearing and speech pathology, family dynamics, cognition and psycho-educational assessment.
PSY645 Introduction to Psychological Evaluation
3 credits  Fall Semester
Measurement theory; introduction to the administration and interpretation of widely-used intelligence and personality tests, with attention to issues of ethics and diversity.
PREREQUISITE: PERMISSION OF DIRECTOR OF CLINICAL PSYCHOLOGY TRAINING PROGRAM.

PSY646 Psychological Evaluation of Adults
3 credits  Spring Semester
Issues of diversity, ethics, and personality theory as they pertain to psychological evaluation of adults. Emphases on the use of projective and objective personality assessment methods.
PREREQUISITE: PSY 645 AND PERMISSION OF DIRECTOR OF CLINICAL PSYCHOLOGY TRAINING PROGRAM.

PSY647 Psychological Evaluation of Children and Families
3 credits  Spring Semester
Clinical and developmental theory and methods pertaining to the evaluation of children, adolescents, and families including intelligence tests, structured diagnostic instruments, personality and behavioral check lists, observational formats, interviewing, and projective assessment. Attention to issues of ethics and diversity.
PREREQUISITE: PSY 645 AND PERMISSION OF DIRECTOR OF CLINICAL PSYCHOLOGY TRAINING PROGRAM.

PSY648 Psychological Evaluation in Physical Disorders
3 credits  Spring Semester
Administration, interpretation, and psychometric evaluation of psychological tools and procedures used in the evaluation of physical disorders. Attention to issues of ethics and diversity.
PREREQUISITE: PSY 610 OR 645 OR PERMISSION OF INSTRUCTOR.

PSY649 Evaluation of the Mentally Retarded and Brain-Damaged Child
3 credits  Offered By Announcement Only
Special diagnostic and evaluative procedures and techniques used with the intellectually inefficient child. Laboratory required.
PREREQUISITE: PSY 441, 645 OR EQUIVALENT.

PSY650 Laboratory in Clinical Psychology
0 credit  Fall & Spring Semester
Practical training in clinical skills such as assessment, interviewing, and case conceptualization. Laboratory to be used in conjunction with courses such as PSY 640 and PSY 645
PREREQUISITE: PERMISSION OF THE DIRECTOR OF THE CLINICAL TRAINING PROGRAM

PSY651 Infant Assessment
3 credits  Offered By Announcement Only
Background, history, purpose, and utility of infant assessments. Evaluation of various methods of assessing cognitive, social, language, and emotional development on conceptual, psychometric, empirical and practical grounds.

PSY655 Counseling and Psychotherapy
3 credits  Offered By Announcement Only
Theory and research on traditional and modern therapeutic methods.
PREREQUISITE: PSY 604 OR PERMISSION OF INSTRUCTOR.
PSY656 Introduction to Evidence-Based Psychological Treatments
1-3 credits   Fall Semester
Theories, history, and techniques of psychological and behavioral therapies, with emphasis on evidence-based approaches.
PREREQUISITE: PSY 640.

PSY657 Introduction to Psychotherapy, Ethics, and Professional Issues
3 credits   Spring Semester
Introductory experience in clinical interviewing, therapeutic communication, ethics, and case conceptualization. Consideration of client-and-therapist culture, gender, and diversity are also emphasized.
PREREQUISITE: PERMISSION OF DIRECTOR OF CLINICAL PSYCHOLOGY TRAINING PROGRAM.

PSY658 Introduction to Clinical Methods II
3 credits   Offered By Announcement Only
Continuation of PSY 657.
PREREQUISITE: PSY 657 AND PERMISSION OF DIRECTOR OF CLINICAL PSYCHOLOGY TRAINING PROGRAM.

PSY659 Evidence-Based Psychological Treatments for Adults
3 credits   Offered By Announcement Only
Continuation of PSY 656 with emphasis on a broad range of research pertaining to the efficacy and effectiveness of psychological treatments for adults.
PREREQUISITE: PSY 656 AND PERMISSION OF DIRECTOR OF CLINICAL PSYCHOLOGY TRAINING PROGRAM.

PSY660 Evidence-Based Psychological Intervention with Children and Families
3 credits   Fall Semester
Theories, history, and techniques of psychological and behavioral therapies, with emphasis on evidence-based approaches with children, adolescents, and families. Understanding normative and deviant development, with attention to issues of diversity, ethics, and domestic violence.
PREREQUISITE: PSY 656 OR PERMISSION OF INSTRUCTOR.

PSY661 Interventions in Pediatric Psychology
3 credits   Spring Semester
Pediatric psychology and basic learning theory. Medical and behavioral aspects of child and adolescent health disorders, psychological assessment, and evidence-based treatment approaches.
PREREQUISITE: PSY 656 AND PERMISSION OF DIRECTOR OF CLINICAL PSYCHOLOGY TRAINING PROGRAM.

PSY662 Health Psychology Interventions
3 credits   Fall Semester
Clinical interventions and research relevant to health problems and lifestyle, with emphasis on critical evaluations of past research and the design and implementation of intervention protocols. The origins of health psychology and the role of the health psychologist in medical systems.
PREREQUISITE: PSY 610 OR 656 OR PERMISSION OF INSTRUCTOR.
PSY663 Cognitive Behavior Therapy
3 credits
Offered By Announcement Only
Theory, history, research, and practice in cognitively oriented forms of therapy, including cognitive restructuring, rational emotive therapy, and cognitive behavior modification.
PREREQUISITE: PSY 656 AND PERMISSION OF DIRECTOR OF CLINICAL PSYCHOLOGY TRAINING PROGRAM.

PSY664 Group Psychotherapy
3 credits
Offered By Announcement Only
Procedures, techniques, and theoretical perspectives.
PREREQUISITE: PSY 656 OR PERMISSION OF DIRECTOR OF CLINICAL TRAINING.

PSY665 Family Therapy
3 credits
Offered By Announcement Only
History of family therapy, including theoretical perspectives, methods, and techniques associated with each. Includes behavioral, cognitive, dynamic, interpersonal, and systems family therapeutic approaches, in addition to a focus on family developmental process. Attention to ethics and diversity.
PREREQUISITE: PSY 656 OR PERMISSION OF DIRECTOR OF CLINICAL TRAINING.

PSY666 Research and Theory of Early Intervention
3 credits
Fall Semester
Theories, models, methods, purposes, and utility of intervention in young children. Includes illustrative examples from contemporary intervention research literature.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

PSY670 Practicum in Clinical Psychology
1-3 credits Fall & Spring Semester & First & Second Summer Session
Supervised experience in evaluating and treating psychological problems of children, adolescents, families, and/or adults behavior. For students placed at the U.M. Psychological Services Clinic there is a weekly case conference that focuses on ethics case conceptualization. Course may be repeated for credit.
PREREQUISITE: PERMISSION OF DIRECTOR OF CLINICAL PSYCHOLOGY TRAINING PROGRAM.

PSY671 Practicum in Clinical Psychology II
0 credit
Fall Semester
Continuation of PSY 670.
PREREQUISITE: PERMISSION OF DIRECTOR OF CLINICAL PSYCHOLOGY TRAINING PROGRAM.
COREQUISITE(S): PSY 645

PSY672 Advanced Practicum in Clinical Psychology
1-3 credits Fall & Spring Semester
Advanced experience in special clinical techniques and clinical supervision. Primarily for post-internship clinical students. The advisor may direct that PSY 672 be repeated, but no more than six credits may be applied toward a degree.
PREREQUISITE: PSY 671 AND PERMISSION OF DIRECTOR OF CLINICAL PSYCHOLOGY TRAINING PROGRAM.

PSY673 Advanced Practicum in Professional Psychology I
1-3 credits Fall & Spring Semester
Advanced experience in special clinical techniques, supervision and/or teaching. No more than a total of six credits in PSY 673 and 674 may be counted toward the required 90 credits for the Ph.D. degree.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.
PSY674 Advanced Practicum in Professional Psychology II
1-3 credits    Fall & Spring Semester
A continuation of PSY 673. No more than a total of six credits in PSY 673 and 674 may be counted toward the required 90 credits for the Ph.D. degree.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

PSY675 Field Experience in Behavioral Medicine
3 credits                                              Offered By Announcement Only
Observation, assessment, and/or health psychology intervention opportunities in physical health care settings.
PREREQUISITE: PSY 605, 640. COREQUISITE: PSY 612 OR 623.

PSY676 Practicum on Mental Retardation
3 credits                                              Offered By Announcement Only
Specialized practicum especially in the evaluation or counseling, both individual and group with retardates.
PREREQUISITE: PSY 670.

PSY680 Research
1-4 credits    Fall & Spring Semester & First & Second Summer Session
Investigation of an original problem.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

PSY681 Research
1-4 credits    Fall & Spring Semester & First & Second Summer Session
Investigation of an original problem.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

PSY682 Special Projects
2-4 credits    Fall & Spring Semester
Designed to allow students to earn credit in special projects of educational nature which do not fit readily into existing course offerings. Not to be used as a substitute for other courses.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF CHAIRMAN.

PSY683 Special Topics
3 credits                                              Fall & Spring Semester
Topics in selected areas of specialization.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

PSY684 Readings in Psychology
3 credits                                              Fall & Spring Semester
Supervised readings in selected topics.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

PSY685 Seminar in Clinical Psychology
3 credits                                              Fall & Spring Semester

PSY686 Seminar in Clinical Psychology
3 credits                                              Fall & Spring Semester

PSY687 Seminar in Clinical Psychology
3 credits                                              Offered By Announcement Only
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PSY710 Master's Thesis
1-6 credits  Fall & Spring Semester
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

PSY720 Research in Residence
0 credit  Fall & Spring Semester
Research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in PSY 710 (usually six credits). Credit not granted. May be regarded as full time residence.

PSY725 Continuous Registration--Master's Study
0 credit  Fall & Spring Semester
To establish residence for non-thesis master's students who are preparing for major examinations. Credit not granted. Regarded as full time residence.

PSY730 Doctoral Dissertation
1-12 credits  Fall & Spring Semester
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor, but for not less than a total of 12 hours. Up to 12 hours may be taken in a regular semester, but not more than six in a summer session.

PSY740 Post-Candidacy Doctoral Dissertation
1-12 credits  Fall & Spring Semester
Required of all candidates for the Ph.D. who have advanced to candidacy. The student will enroll for credit as determined by his/her advisor, but not for less than a total of 12. Not more than 12 hours of PSY 740 may be taken in a regular semester, nor more than six in a summer session.
PREREQUISITE: ADMISSION TO PH.D. CANDIDACY

PSY750 Research in Residence
0 credit  Fall & Spring Semester
Used to establish research in residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

RELGIOUS STUDIES

REL501 Supervised Reading in Religious Literature or Texts
1-3 credits  Offered By Announcement Only
Independent study to enable students to read extensively in an area of personal interest in religious literature or texts.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

REL502 Supervised Reading in Religious or Historical Traditions
1-3 credits  Offered By Announcement Only
Independent study to enable students to read extensively in an area of personal interest in religious or historical traditions.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

REL503 Supervised Reading in Religious Issues or Problems
1-3 credits  Offered By Announcement Only
Independent study to enable students to read extensively in an area of personal interest in religious issues or problems.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
REL505 Seminar in Ancient Studies  
3 credits 
Offered By Announcement Only  
Various topics in Greek and Roman Studies.  
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR.

REL510 Seminar in Hebrew Bible and Ancient Judaism  
3 credits 
Offered By Announcement Only  
Selected topics in Hebrew Bible and Ancient Judaism.  
PREREQUISITE: JUNIOR STANDING AND SIX CREDITS IN RELIGIOUS STUDIES; PERMISSION OF THE INSTRUCTOR.

REL520 Seminar in New Testament and Early Christianity  
3 credits 
Offered By Announcement Only  
Selected topics in New Testament and Early Christianity.  
PREREQUISITE: JUNIOR STANDING AND SIX CREDITS IN RELIGIOUS STUDIES; PERMISSION OF THE INSTRUCTOR.

REL530 Seminar in Religious or Historical Traditions  
1-3 credits 
Offered By Announcement Only  
Selected topics in religious or historical traditions.  
PREREQUISITE: JUNIOR STANDING AND SIX CREDITS IN RELIGIOUS STUDIES; PERMISSION OF INSTRUCTOR.

REL550 Seminar in Religious Ethics  
3 credits 
Offered By Announcement Only  
Selected issues in religious ethics and their social implications.  
PREREQUISITE: SIX CREDITS IN RELIGIOUS STUDIES AND JUNIOR STANDING.

REL560 Seminar in Contemporary Religious Issues  
1-3 credits 
Offered By Announcement Only  
Selected topics in contemporary religious issues.  
PREREQUISITE: JUNIOR STANDING AND SIX CREDITS IN RELIGIOUS STUDIES; PERMISSION OF INSTRUCTOR.

SOCIOLOGY  
SOC601 Classical Sociological Theory  
3 credits 
Offered By Announcement Only  
Major orientations of modern sociology with emphasis upon structural and functional theories.  
PREREQUISITE: SOC 611, GRADUATE STATUS AND INSTRUCTOR PERMISSION

SOC602 Contemporary Sociological Theory  
3 credits 
Offered By Announcement Only  
PREREQUISITE: SOC 611, GRADUATE STATUS AND INSTRUCTOR PERMISSION

SOC603 Selected Topics in Social Theory  
3 credits 
Offered By Announcement Only  
PREREQUISITE: SOC 601, 602. GRADUATE STATUS OR CONSENT OF INSTRUCTOR
SOC604 Proseminar in Sociology
1 credit  Fall Semester
Introduction to Sociology: the research process, departmental resources, and the graduate program. 
PREREQUISITE: GRADUATE STATUS OR CONSENT OF INSTRUCTOR

SOC610 Advanced Research Methods
3 credits  Offered By Announcement Only
Quantitative techniques for the measurement of theoretical constructs, the consequences of technique selection, and the relationships between method and underlying theory. 
PREREQUISITE: GRADUATE STATUS OR CONSENT OF INSTRUCTOR.

SOC611 Advanced Sociological Statistical Analysis I
3 credits  Fall Semester
Introduction to the general linear model for continuous variables in sociological research. Foundations of the model and computerized applications. 
PREREQUISITE: SOC 611, GRADUATE STATUS AND INSTRUCTOR PERMISSION

SOC612 Sociological Statistics II
3 credits  Offered By Announcement Only
Multiple linear regression and regression diagnostics, analysis of categorical dependent variables, count dependent variables, simultaneous equations, and panel data models. 
PREREQUISITE: SOC 611, GRADUATE STATUS AND INSTRUCTOR PERMISSION

SOC613 Qualitative Research Methods
3 credits  Offered By Announcement Only
Qualitative methods, based in a grounded theory orientation, focusing on participant observation and interviewing; methods for the collection of data in naturalistic social settings, with simultaneous data analysis; the history of such approaches; ties between methods and theory; the basic methods used in qualitative research, and typical analytic approaches; current issues and debates relevant to this set of approaches to generating knowledge. 
PREREQUISITE: SOC 611, GRADUATE STATUS AND CONSENT OF INSTRUCTOR

SOC614 Evaluation Research
3 credits  Offered By Announcement Only
Conceptualizing, designing, conducting, and interpreting the results of evaluation research programs in health and human service agencies. 
PREREQUISITE: SOC 610, 611, GRADUATE STATUS OR CONSENT OF INSTRUCTOR

SOC615 Class Structure and Social Stratification
3 credits  Offered By Announcement Only
Theoretical and research approaches to class structure and social stratification, with a focus on the U.S. Examines the conflict perspective(s) and major alternative views including economic class, status and power, gender and race. 
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR

SOC616 Social Psychology: Sociological Perspectives
3 credits  Offered By Announcement Only
Sociological theories and research explaining the influence of human groups and social processes on personality and human social behavior. 
PREREQUISITE: SOC 611, GRADUATE STATUS AND INSTRUCTOR PERMISSION
SOC617 Social Organization
3 credits
Offered By Announcement Only
Effects of industrial downsizing on occupational structure, family income, and social mobility are examined and related to changes in class, ethnic, and racial identity.
PREREQUISITE: SOC 611, GRADUATE STATUS AND INSTRUCTOR PERMISSION

SOC620 Social Epidemiology
3 credits
Offered By Announcement Only
Theories, issues and methods of study pertinent to health and illness in society. Social factors implicated in patterns of disease occurrence.
PREREQUISITE: GRADUATE STATUS OR CONSENT OF INSTRUCTOR

SOC622 Teaching Seminar in Sociology
3 credits
Fall Semester
Pedagogical techniques for teaching Sociology at the college/university level.
PREREQUISITE: GRADUATE STATUS OR CONSENT OF INSTRUCTOR

SOC632 Social Psychology of Health and Illness
3 credits
Offered By Announcement Only
Social and psychological factors affecting susceptibility to illness, health related beliefs and behaviors: the doctor-patient relationship: evaluation of health care systems and patient compliance.
PREREQUISITE: GRADUATE STANDING AND PERMISSION OF INSTRUCTOR

SOC635 Medical Sociology: Issues in Research and Theory.
3 credits
Offered By Announcement Only
Examination of health, illness, and health care from sociological perspectives. Includes social-structural, interpretive, and critical approaches, as various authors have used these to address specific issues. Phenomena to be examined range from macro (e.g. population patterns of mortality and morbidity, health care policy) to micro (e.g. the subjective experience of illness). Related theories and methodologies discussed. Focus varies somewhat by instructor and as issues emerge in the discipline.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR

SOC650 Social Analysis of Race Relations
3 credits
Offered By Announcement Only
The impact of race relations research on the discipline of sociology.
PREREQUISITE: GRADUATE STATUS OR CONSENT OF INSTRUCTOR

SOC651 Race Relations: Social Psychological Perspectives
3 credits
Offered By Announcement Only
Social psychological perspectives on the nature, causes, and consequences of racial inequality in American society.
PREREQUISITE: GRADUATE STATUS OR CONSENT OF INSTRUCTOR

SOC652 Theories of Race and Ethnic Relations
3 credits
Offered By Announcement Only
Micro- and macro-level theories of race and ethnic relations.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR
SOC653 RACE, IDEOLOGY, AND FRAMING INEQUALITY
3 credits
Offered By Announcement Only
Examines the various ideologies that have emerged on the limited states to describe and, at times, resist racial inequality. PREREQUISITE: GRADUATE STATUS AND INSTRUCTOR PERMISSION

SOC671 Seminar on Criminology
3 credits
Offered By Announcement Only
Selected issues, topics, theories, and recent research in criminology. PREREQUISITE: GRADUATE STATUS OR CONSENT OF INSTRUCTOR

SOC672 Research in Crime and Delinquency
3 credits
Offered By Announcement Only
Measurement issues; effects of race, gender, age, and socio-economic status on criminality; extra-legal factors affecting criminal justice decision making. PREREQUISITE: SOC 610 AND 611, GRADUATE STATUS OR CONSENT OF INSTRUCTOR

SOC673 Theories of Criminology
3 credits
Offered By Announcement Only
Review and critique of central criminological theories. Evaluation of these theories in view of recent criminological research. PREREQUISITE: NONE

SOC675 Theories of Criminology
3 credits
Offered By Announcement Only
Review and Critique of central criminological theories. Evaluation of these theories in view of recent criminological research. PREREQUISITE: GRADUATE STATUS OR CONSENT OF INSTRUCTOR

SOC690 Directed Studies
1-3 credits
Offered By Announcement Only
Individually supervised readings or research on special topics. Offered by arrangement with the instructor. PREREQUISITE: GRADUATE STATUS OR CONSENT OF INSTRUCTOR

SOC691 Special Topics and Current Issues in Medical Sociology
1-3 credits
Offered By Announcement Only
Seminar topics will be announced in schedule of classes. PREREQUISITE: GRADUATE STATUS OR PERMISSION OF INSTRUCTOR

SOC692 Special Topics and Current Issues in Criminology
1-3 credits
Offered By Announcement Only
Seminar topics will be announced in schedule of classes. PREREQUISITE: GRADUATE STATUS OR PERMISSION OF INSTRUCTOR

SOC693 Special Topics and Current Issues in Race/Ethnic Relations
1-3 credits
Offered By Announcement Only
Seminar topics will be announced in schedule of classes. PREREQUISITE: GRADUATE STATUS OR PERMISSION OF INSTRUCTOR
SOC710 Master's Thesis
1-6 credits Fall & Spring Semester
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.
PREREQUISITE: GRADUATE STATUS OR CONSENT OF INSTRUCTOR

SOC720 Research in Residence
0 credit Fall & Spring Semester
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in SOC 710 (usually six credits). Credit not granted. May be regarded as full time residence.
PREREQUISITE: GRADUATE STATUS OR CONSENT OF INSTRUCTOR

SOC730 Pre-Candidacy Doctoral Dissertation
1-12 credits Fall & Spring Semester
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor, but for not less than a total of 12 hours. Up to 12 hours may be taken in a regular semester, but not more than six in a summer session.

SOC740 Post-Candidacy Doctoral Dissertation
1-12 credits Fall & Spring Semester
Required of all candidates for the Ph.D. who have advanced to candidacy. The student will enroll for credit as determined by his/her advisor, but not for less than a total of 12. Not more than 12 hours of SOC 740 may be taken in a regular semester, nor more than six in a summer session.

SOC750 Research in Residence
0 credit Fall & Spring Semester
Used to establish research in residence for the Ph.D. and D.A., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.
PREREQUISITE: GRADUATE STATUS OR CONSENT OF INSTRUCTOR

SPANISH

SPA501 CAPSTONE
3 credits Fall & Spring Semester
Course with a broad-based topic designed to integrate all the high-level linguistic, critical and analytical skills with the body of knowledge acquired during the course of study towards the major. Topics vary. Open only to undergraduates completing their Spanish major. Writing Credit. To be taken in the last semester of the major.
PREREQUISITE: TO BE TAKEN IN THE LAST SEMESTER OF THE MAJOR.

SPA591 Directed Readings
1-3 credits Offered By Announcement Only
PREREQUISITE: ONE 500-LEVEL COURSE AND THE PERMISSION OF THE INSTRUCTOR.

SPA592 Directed Readings
1-3 credits Offered By Announcement Only
PREREQUISITE: ONE 500-LEVEL COURSE AND THE PERMISSION OF THE INSTRUCTOR.

SPA593 Directed Readings
1-3 credits Offered By Announcement Only
PREREQUISITE: ONE 500-LEVEL COURSE AND THE PERMISSION OF THE INSTRUCTOR.
SPA594 Senior Honors Thesis I
3 credits
Fall & Spring Semester
Directed research for honors thesis.
PREREQUISITE: MUST HAVE COMPLETED AT LEAST 12 CREDITS AT THE 300-LEVEL OR ABOVE TOWARDS SPANISH MAJOR, MUST MEET ELIGIBILITY FOR HONORS IN SPANISH.

SPA595 Senior Honors Thesis II
3 credits
Fall & Spring Semester
Directed writing of honors thesis.
PREREQUISITE: SPA 594.

SPA611 Topics in Spanish Medieval Literature
3 credits
Offered By Announcement Only
Recent topics: Libro de Buena mor, the epic, Berceo, cancionero poetry.

SPA613 Topics in the Golden Age
3 credits
Offered By Announcement Only
Recent topics: culteranismo and conceptismo, La Celestina, Cervantes, the picaresque, sixteenth-century theatre.

SPA615 Topics in 18th-19th Century Spanish Literature
3 credits
Offered By Announcement Only
Recent topics: neoclassicism, romantic theatre, Spain and the European Enlightenment, Galdos, realism, post romantic poetry.

SPA616 Topics in 20th Century Spanish Literature
3 credits
Offered By Announcement Only
Recent topics: the generation of 1898, Garcia Lorca, the post-war novel, contemporary theater.

SPA621 Special Topics in Hispanic Studies
3 credits
Offered By Announcement Only

SPA633 Topics in Colonial Literature
3 credits
Offered By Announcement Only
Recent topics: the chroniclers, Sor Juana Ines de la Cruz, Baroque of the Indies.

SPA635 Topics in 19th Century Latin American Literature
3 credits
Offered By Announcement Only
Recent topics include: romanticism, modernist poetry, anti-slavery novel.

SPA636 Topics in 20th Century Latin American Literature
3 credits
Offered By Announcement Only
Recent topics: modernism, magic realism, the short story, the novel of the Mexican Revolution, the Boom and post-Boom.

SPA691 Writing Practicum
1 credit
Offered By Announcement Only
The writing of a publishable research paper under faculty guidance.

SPA692 Directed Readings
1-3 credits
Offered By Announcement Only

SPA693 Teaching Practicum
3 credits
Offered By Announcement Only
SPA730 Pre-Candidacy Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. Prior to admission to candidacy, the student will enroll for credit as determined by his/her advisor. Not more than 12 hours of SPA 730 may be taken in a regular semester, nor more than six in a summer session. Students who have not passed their qualifying examinations yet, but are not taking any courses, may enroll in SPA 730.

SPA740 Post-Candidacy Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. After admission to candidacy, the student will enroll for credit as determined by his/her advisor. Not more than 12 hours of SPA 740 may be taken in a regular semester, nor more than six in a summer session. Students who have passed their qualifying examinations, but are not taking courses any more, may enroll in SPA 740. Where a student has passed his/her(a) qualifying examinations, and (b) is engaged in an assistantship, he/she may still take the maximum allowable credit stated above.

SPA750 Research in Residence
0 credit                     Fall & Spring Semester & First & Second Summer Session
Used to establish residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

WOMEN'S & GENDER STUDIES
WGS501 Senior Research Project
3 credits                    Fall & Spring Semester & First & Second Summer Session
A student initiated research project with a faculty member of the student's choice and approved by the Program director. Writing Credit.
PREREQUISITE: WGS MAJOR OR MINOR, SENIOR STATUS, AND WGS 201 AND 301.

WGS505 Senior Thesis
3 credits                    Fall & Spring Semester & First & Second Summer Session
Women's and Gender Studies majors with a cumulative GPA of at least 3.5 in WGS courses and an overall GPA of at least 3.0 may earn departmental honors by completing an honors thesis instead of the senior research project. Candidates for departmental honors are responsible for finding a faculty member who is willing to serve as thesis adviser and then must complete a thesis proposal of approximately 400 words which must be approved by the thesis adviser and then the program director. Most students will take this course twice, for a total of six credits. Writing Credit.
PREREQUISITE: WGS MAJOR OR MINOR, SENIOR STATUS, WGS 201 AND 301, AND APPROVAL OF PROGRAM DIRECTOR.

THEATRE ARTS
THA561 Advanced Directing I
3 credits                    Offered By Announcement Only
Continuation of THA 462. Developing a philosophy of theatrical production. Case studies in practical directing problems. The student directs a short play.
PREREQUISITE: THA 462 OR PERMISSION OF INSTRUCTOR.
ACC501 Advanced Cost Accounting
3 credits
Offered By Announcement Only
The latest developments in cost and managerial accounting are studied. Using case studies, the course focuses on activity based product cost allocation methodology in terms of: (1) basic concepts and rationale, (2) applicability in both manufacturing and service industries, (3) strategic cost analyses, and (4) applicability in total quality management programs. Other topics include cost pools, two stage costing methodologies, and the behavioral aspects of cost systems. Finally, students implement an activity based cost system using commercially developed software.
PREREQUISITE: ACC 301 AND SENIOR STATUS.

ACC505 Accounting Controls in Information Technology
3 credits
Offered By Announcement Only
Course develops a student's understanding of the theory and practice of relational database management systems in the accounting view of enterprise-wide databases. With a focus on controls, students build accounting system elements related to main accounting transaction cycles, the revenue cycle, and the purchase cycle.
PREREQUISITE: ACC 212 AND PERMISSION OF INSTRUCTOR; SENIOR STATUS.

ACC506 Internal Auditing
3 credits
Offered By Announcement Only
Course explores the unique issues associated with the internal audit function. Additionally, the ethical code applicable to internal auditors is discussed.
PREREQUISITE: ACC 402 AND SENIOR STATUS.

ACC511 Advanced Accounting
3 credits
Fall & Spring Semester
The primary focus on the course is on business combinations and preparing consolidated financial statements. Additionally, there is coverage of the accounting principles and practices applied to foreign operations and partnerships. This meets the requirement for accounting students who are required to take Accounting 411.
PREREQUISITE: ACC 312 AND SENIOR STATUS.

ACC522 Advanced Issues in Auditing
3 credits
Fall Semester
Course covers advanced issues which arise in audit practice including audit reporting issues, fraud detection and reporting, attestation engagements, special reporting issues, compilation and review engagements, scope of services issues, and other new issues which have a significant impact on audit practice.
PREREQUISITE: ACC 402 AND ACCEPTED INTO THE ACCOUNTING ACCELERATED PROGRAM OR GRADUATE STATUS.

ACC523 International Accounting and Taxation
3 credits
Offered By Announcement Only
Course covers tax accounting and business considerations in the global business environment. U.S. issues involved in international transactions, working across national borders, the Foreign Corrupt Practices Act, money laundering, and uses of accounting information in managing an international business.
PREREQUISITE: ACC 212 AND SENIOR STATUS.
ACC524 Accounting for Governmental and Not-for-Profit Entities
2 credits  
Fall Semester
The course introduces accounting within the environment of modern government and not-for-profit organizations. Emphasis is placed on financial accounting and reporting, current accounting issues, and managerial activities.
PREREQUISITE: ACC 312 AND ACCEPTED INTO THE ACCOUNTING ACCELERATED PROGRAM OR GRADUATE STATUS.

ACC525 Trends in Present Day Accounting
3 credits  
Offered By Announcement Only
Recent developments in accounting thought and advanced accounting theory. The analysis of trends as disclosed by recent releases of the Securities and Exchange Commission, the American Institute of Certified Public Accountants, and the Financial Accounting Standards Board are discussed. Other topics include terminology, current trends in the measurement, presentation of financial data to meet the needs of third parties, and surveys accounting literature.
PREREQUISITE: ACC 312 AND SENIOR STATUS.

ACC530 International Financial Reporting Standards
1 credit  
Fall Semester
This course provides an overview of International Financial Reporting Standards (IFRS). The course will begin with a study of IFRS Framework and will then examine a number of the major topics covered in the Intermediate Accounting courses. The perspective will be a comparison between IFRS and U.S. generally accepted accounting principles (U.S. GAAP).
PREREQUISITE: ACC 312 AND ACCEPTED INTO THE ACCOUNTING ACCELERATED PROGRAM OR GRADUATE STATUS.

ACC550 Accounting Internship
0- 3 credits  
Fall & Spring Semester & First & Second Summer Session
Student is individually assigned to operating business firm or other organization to gain insight into management practice in area of career interest. Periodic reports and conferences are required. Approval of chairman is required at time of registration.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

ACC555 Accounting Honors Research Project
0- 3 credits  
Offered By Announcement Only
Research project to fulfill requirements for Departmental Honors Accounting.
PREREQUISITE: 3.9 GPA. SENIOR STANDING. PERMISSION OF INSTRUCTOR AND DEPARTMENT.

ACC599 Directed Readings
1- 3 credits  
Fall & Spring Semester & First & Second Summer Session
Individually supervised research projects in selected fields. Approval of supervising professor as to topic and evaluation of project is required at time of registration.
PREREQUISITE: SENIOR STANDING AND PERMISSION OF DEPARTMENT CHAIR.
ACC600 Accounting for Decision-Making and Control
3 credits Offered By Announcement Only
The course focuses on the use and understanding of basic financial and managerial accounting reports. The course is oriented to the user of financial data rather than the preparer of the data. Coverage of basic accounting assumptions and current issues affecting accounting processes and reporting are included, but detailed accounting procedures are not emphasized. Completion of the course should permit students to understand accounting information and to communicate with professional accountants. Does not satisfy any accounting requirements needed to sit for the CPA exam in Florida.

ACC601 Trends in Present Day Accounting
3 credits Offered By Announcement Only
Recent developments in accounting thought and advanced accounting theory. The analysis of trends as disclosed by recent releases of the Securities and Exchange Commission, the American Institute of Certified Public Accountants, and the Financial Accounting Standards Board are discussed. Other topics include terminology, current trends in the measurement, presentation of third financial data to meet the needs of third parties, and surveys accounting literature.
PREREQUISITE: ACC 312.

ACC602 Analysis of Financial Statements
3 credits Spring Semester
Course emphasizes the fundamental techniques of financial statement analysis. Building upon core accounting and investment concepts, the course covers the analysis (including ratio analysis) and interpretation of financial accounting information including the balance sheet, income statement, and statement of cash flows. The course also examines the use of accounting information in investment and credit decisions.
PREREQUISITE: ACC 312.

ACC603 Studies in Financial Reporting Issues
3 credits Spring Semester
An exploration of complex financial reporting issues using the case method.
PREREQUISITE: ACC 312.

ACC604 Seminar in Cost Accounting
2 credits Fall Semester
Course covers four major segments. First, it reviews the basic concepts and tools associated with management control systems. Second, it underscores the importance of decentralization and the impact it has on decision making. Third, it examines the strategic place for cost management. Examples include the adoption of the balanced score card, quality control, productivity, and environmental cost management. Fourth, the course brings costing and control tools into the discussion of decision making.
PREREQUISITE: ACC 301 OR PERMISSION OF INSTRUCTOR.

ACC605 Enterprise Resource Planning (ERP) Financial Systems
3 credits Offered By Announcement Only
Course emphasizes the use of Enterprise Resource Planning Systems to collect, monitor, and evaluate financial and managerial data. Students are introduced to how data is captured from the purchasing function through the sales function and how business activities impact the financial statements. The course also utilizes the Enterprise Resource Planning Systems to evaluate managerial performance and financial performance using concepts such as Activity Based Costing, Data Warehousing, and Key Performance Indicators. ERP systems installations are introduced using case materials.
PREREQUISITE: ACC 212.
ACC606 Internal Auditing

3 credits
Offered By Announcement Only
Course explores the unique issues associated with the internal audit function. Additionally, the ethical code applicable to internal auditors is discussed.
PREREQUISITE: ACC 402.

ACC607 Financial Accounting & Reporting

3 credits
Spring Semester & Second Summer Session
Basic concepts of accounting designed to increase understanding of the function of accounting statements and their limitations. The generally accepted principles governing the preparation of financial reports and the use of accounting information in investment and credit decisions. Does not satisfy any accounting requirement needed to sit for the CPA Exam in Florida. Limited to Executive MBA students only.
PREREQUISITE: LIMITED TO EXECUTIVE MBA ONLY.

ACC608 Managerial Accounting

3 credits
Offered By Announcement Only
Current managerial accounting techniques and theories. Topics include the use of accounting data in making decisions and planning and control systems for implementation of decisions. Does not satisfy any accounting requirements needed to sit for the CPA Exam in Florida. Limited to Executive MBA students only.
PREREQUISITE: ACC 607 OR EQUIVALENT.

ACC610 Accounting Research and Theory

3 credits
Fall Semester
This course is an introduction to research in financial accounting. In this course, students will become familiar with the foundations of accounting research, including hypothesis development, data collection, and data analysis. To this end, students will become familiar with empirical research in accounting, learn to construct a dataset for hypothesis testing, and conduct some basic statistical analysis (e.g., Ordinary Least Squares regressions). Accounting topics covered will include accounting information and the capital markets, financial restatements, accounting method choice, earnings management, earnings quality, and international accounting.
PREREQUISITE: ACC 312.

ACC611 Auditing Seminar

2 credits
Fall Semester
Practical applications of auditing and research into audit matters. Emphasis of the course is placed on cases involving audit failures, appropriate auditing procedures, reporting, and exercise of audit judgment.
PREREQUISITE: ACC 402.

ACC612 Contemporary Issues in Financial Accounting

3 credits
Offered By Announcement Only
Doctoral seminar investigating financial reporting issues and their implications in the behavior of users and preparers of the financial statements. Course focuses on research methodologies used to investigate these issues and discuss alternative approaches.
PREREQUISITE: LIMITED TO DOCTORAL STUDENTS USING ACCOUNTING AS A MAJOR OR MINOR FIELD OF STUDY OR PERMISSION OF INSTRUCTOR.
ACC614 Contemporary Issues in Cost/Managerial Accounting

3 credits Offered By Announcement Only
Doctoral seminar investigating the use and implications of cost and managerial accounting systems in an organizational context. Course emphasizes the behavioral aspects of accounting systems.
PREREQUISITE: LIMITED TO ACCOUNTING DOCTORAL STUDENTS OR PERMISSION OF INSTRUCTOR.

ACC616 CPA Review I

3 credits Second Summer Session
Course covers the fundamentals of insurance and retirement planning including tax and investment implications. In addition, various types of employee plans available are discussed.
PREREQUISITE: STUDENTS MUST HAVE RECEIVED THEIR UNDERGRADUATE DEGREE FROM THE UNIVERSITY OF MIAMI AND COMPLETED THE REQUIREMENTS OF THE ACCELERATED ACCOUNTING PROGRAM DURING THEIR SENIOR YEAR

ACC617 CPA Review II

3 credits Second Summer Session
PREREQUISITE: STUDENTS MUST HAVE RECEIVED THEIR UNDERGRADUATE DEGREE FROM THE UNIVERSITY OF MIAMI AND COMPLETED THE REQUIREMENTS OF THE ACCELERATED ACCOUNTING PROGRAM DURING THEIR SENIOR YEAR

ACC620 Accounting Controls in Information Technology

3 credits Offered By Announcement Only
Course develops students' understanding of the theory and practice of relational database management systems in the accounting view of enterprise-wide databases. With a focus on controls, students build accounting systems elements related to main accounting transaction cycles, the revenue cycle, and the purchase cycle.
PREREQUISITE: ACC 306

ACC621 Advanced Cost Accounting

2 credits Offered By Announcement Only
PREREQUISITE: ACC 301

ACC622 Advanced Issues in Auditing

3 credits Fall Semester
Course covers advanced issues which arise in audit practice including audit reporting issues, fraud detection and reporting, attestation engagements, special reporting issues, compilation and review engagements, scope of services issues, and other new issues which have a significant impact in audit practice. Not open to students with credit in ACC 522.
PREREQUISITE: ACC 402

ACC623 International Accounting and Taxation

3 credits Fall Semester & First Summer Session
Course covers tax accounting and business considerations in the global business environment. U.S. tax issues involved in international transactions, working across national borders, the Foreign Corrupt Practices Act, money laundering and uses of accounting information in managing an international business. Not open to students with credit for ACC 523.
PREREQUISITE: ACC 670 AND 671 OR EQUIVALENT.
ACC624 Accounting for Governmental and Not-for-Profit Entities
3 credits  
Spring Semester & First Summer Session
The course introduces accounting within the environment of modern government and not-for-profit organizations. Emphasis is placed on financial accounting and reporting, current accounting issues, and managerial activities. Not open to students with credit for ACC 524.
PREREQUISITE: ACC 312 OR PERMISSION OF INSTRUCTOR.

ACC631 Advanced Financial Accounting Topics
3 credits  
Fall Semester
Coverage of the Generally Accepted Accounting Principles governing business combinations, the preparation of consolidated financial statement including local and foreign subsidiaries, and other financial reporting topics.
PREREQUISITE: ACC 312, NOT OPEN TO STUDENTS WHO HAVE TAKEN ACC 411.

ACC632 Intermediate Accounting I
2 credits  
Second Summer Session
The accounting principles which shape the financial reporting practices followed by entities that prepare financial statements in accordance with generally accepted accounting principles are discussed. Course also includes the determination of income components and balance sheet elements with brief coverage of the statement of cash flows. Does not count towards the credits needed to graduate.
PREREQUISITE: ACCOUNTING 211

ACC633 Intermediate Accounting II
2 credits  
Second Summer Session
The accounting principles which shape the financial reporting practices followed by entities that prepare financial statements in accordance with generally accepted accounting principles are discussed. Course also includes the determination of income components and balance sheet elements with brief coverage of the statement of cash flows. Does not count towards the credits needed to graduate.
PREREQUISITE: INTERMEDIATE ACCOUNTING I

ACC634 Cost Accounting
2 credits  
Second Summer Session
Topics include basic cost concepts, product costing techniques including job-order and process costing, in-depth studies of techniques and issues surrounding cost allocation methods, basic approaches to solving complex accounting problems, standard cost systems and variance analysis, and variable costing. Additionally, activity-based costing concepts and methodology are introduced. This course does not count towards the credits needed to graduate.
PREREQUISITE: ACCOUNTING 211

ACC635 Auditing
2 credits  
Second Summer Session
Course provides an introduction to the field of auditing. It concentrates on conducting an audit of financial statements in accordance with generally accepted auditing standards. Course covers accounting information systems, audit planning, audit risk and materiality assessments, evaluation of internal control, audit evidence, documentation, and audit reports. This course does not count towards the credits needed to graduate.
PREREQUISITE: ACCOUNTING 211
ACC636 Accounting Systems
2 credits  Second Summer Session
Contemporary accounting systems are computer based. Course covers the nature, design, implementation, and controls in computerized systems as well as manual systems. Micro computers are used as a learning tool. This course does not count towards the credits needed to graduate.
PREREQUISITE: ACCOUNTING 212

ACC639 Income Taxation and Business Entitles
2 credits  Fall Semester
This course is designed to be the second tax course students who are interested in the business applications of federal income tax laws, as they affect corporations, partnerships, and their owners. Emphasis is placed on tax planning aspects of formation, operation, liquidation, and distributions of corporations and partnerships. Not open to students with credit in ACC 404 or equivalent.
PREREQUISITE: ACC 673 OR EQUIVALENT.

ACC640 CORPORATE TAXATION I
2 credits  Fall Semester
Course covers treatment of the corporate form of organization, its related opportunities, and problem areas, including formation, tax formula, non-liquidating and liquidating distributions, capital structure, redemptions, alternative minimum tax, S corporation election, and operation.
PREREQUISITE: ACC 404 OR PERMISSION OF INSTRUCTOR.

ACC641 CORPORATE TAXATION II
2 credits  Fall Semester
An in-depth study of taxable and nontaxable corporate reorganizations. An introduction to affiliated corporations, requirements for consolidated returns, and their associated problems and opportunities are discussed.
PREREQUISITE: ACC 640 OR PERMISSION OF INSTRUCTOR.

ACC642 SEMINAR IN TAXATION
2 credits  Spring Semester
Investigation of current topical areas in taxation.
PREREQUISITE: ACC 404 OR PERMISSION OF INSTRUCTOR.

ACC643 Tax Research
2 credits  Spring Semester
Study of the tax practice environment including the Treasury Department, the Courts, and the legislative history of the Internal Revenue Code. Ethics in tax practice are also examined. Course includes training in the use of tax services such as RIA Checkpoint and LEXIS, in performing tax research. A research methodology for solving tax problem cases is studied and cases to be researched are assigned.
PREREQUISITE: ACC 404 AND SENIOR/MACC OR GRADUATE STATUS.

ACC645 PARTNERSHIP TAXATION
2 credits  Fall Semester
Taxation of partners and partnerships, formation, termination, distributions, liquidations, and sales of partnership interests are covered. Limited partnerships in conjunction with their use as tax shelters are discussed as well as family partnerships, limited liability companies, and LLPs.
PREREQUISITE: ACC 404 OR PERMISSION OF INSTRUCTOR.
ACC647 Estates and Gift Taxes
3 credits First Summer Session
Estate and gift planning for shifting wealth from one individual to another by
death, gift, or by the use of trusts. Property included in the decedent's gross
estate valuation methods, gifts in contemplation of death, jointly held property,
life insurance, transfers with retained life estates, bequests, revocable transfers,
the marital deduction, powers of appointment, gifts of present and future interest,
and gifts to minors are covered.
PREREQUISITE: ACC 404 OR PERMISSION OF INSTRUCTOR.

2 credits Fall Semester
This course is designed to provide the foundation necessary to understand the financial
accounting and reporting of book-tax differences. The course will cover the preparation
of the income tax provision and related financial statement disclosures in conformity
with U.S. GAAP (FASB ASC 740)
PREREQUISITE: ACC 312 AND ACC 404 OR EQUIVALENT.

ACC649 ISSUES IN TAX POLICY
2 credits First Summer Session
This course looks at the process through which our tax laws are created and the
important policy issues inherent in individual and corporate income taxes, consumption
taxes, and wealth transfer taxes. Topics in this course are not limited to U.S.
taxation and include an examination of systems used in other countries (such as
the VAT) as possible alternatives to our current tax.

ACC650 Accounting Internship
1-3 credits Fall & Spring Semester & First & Second Summer Session
Student is individually assigned to operating business firm or other organization
to gain insight into management practice in area of career interest. Periodic reports
and conferences required.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

ACC660 Managerial Accounting in Healthcare Organizational
3 credits Offered By Announcement Only
This course covers Managerial Accounting concepts applied to healthcare organizations.
Topics include cost allocation and management control systems.
PREREQUISITE: NONE

ACC662 Taxation of Multinational Corporations
2 credits Fall Semester
This course introduces the fundamental tax concepts underlying U.S. taxation of
international transactions. Topics include the taxation of U.S. corporations with
income from foreign sources, intercompany pricing, anti-tax avoidance provisions,
and tax treaties.
PREREQUISITE: ACC 640 OR PERMISSION OF THE INSTRUCTOR.
ACC670 Financial Reporting and Analysis
2 credits Fall & Spring Semester & Second Summer Session
The course focuses on the analysis and use of financial accounting information in the evaluation of corporate performance. The course initially demonstrates the accounting process and resulting generation of financial statements. Building on these core accounting concepts, the course emphasizes the understanding of financial statements prepared under U.S. and International Accounting Standards and the analysis of these financial statements including common size analysis, ratio analysis, the impact of taxes, and credit analysis. Completion of the course enhances the student's ability to read, interpret, and analyze financial statements for making investment, credit, acquisition, and other evaluation decisions. Limited to MBA students and Executive MBA students. Does not satisfy any accounting requirements needed to sit for the CPA Exam in Florida.
PREREQUISITE: LIMITED TO MBA STUDENTS AND EXECUTIVE MBA STUDENTS.

ACC671 Accounting for Decision Making
2 credits Fall & Spring Semester
The course focuses on the use of accounting information in reporting managerial performance and making business decisions. The course covers the preparation and use of managerial accounting information for use in planning, budgeting, control, break-even analysis and pricing, including the impact of taxes. Completion of the course will enhance the student's ability to understand managerial accounting reports and use this information in making business decisions. Limited to MBA students and Executive MBA students. Does not satisfy any accounting requirement needed to sit for the CPA Exam in Florida.
PREREQUISITE: ACC 670.

ACC672 Advanced Financial Analysis
2 credits Fall Semester
Advanced Financial Analysis and Valuation builds on the analytical techniques developed in the basic financial statement analysis course, Accounting 670: Financial Reporting and Analysis, to augment your understanding of more complex financial reporting issues and to introduce you to the valuation of equity investments. The viewpoint is that of the user of financial statements, particularly from the standpoint of an equity investor or purchaser of a business. We discuss each financial reporting issue in terms of its effect on assessments of a firm's profitability and risk.
This course is designed primarily for students who expect to be intensive users of financial statements as part of their professional responsibilities.
PREREQUISITE: ACC 670 AND 671

ACC673 Taxation for Business and Investment Decisions
2 credits Spring Semester
This course is designed to be the first tax course for students who are interested in acquiring the basic knowledge that all executives and investors should have about our federal income tax system. The primary focus of this course is on business entities (including C corporations, S corporations, partnerships and sole proprietorships) with individuals covered in their role as employees and investors. A sample of topics includes choice of business organizational form, deductible business expenses, employee fringe benefits and retirement planning capital gains and losses, and tax-deferred exchanges. Completion of this course will enhance the students' appreciation of the role of taxation in making investment, employment-related, and business decisions. Not open to students with credit in ACC 403 or equivalent. Prerequisite: ACC 670 or Equivalent.
PREREQUISITE: ACC 670 OR EQUIVALENT.
ACC675 Compensation, Incentives and Strategic Control
2 credits Fall Semester
Internal control is the process by which owners influence manager's of organization to implement the organization's strategies. They key idea is that different organizations typically have different strategies which in turn require different control systems for effective implementation. Internal control involves both formal systems and informal processes. Accounting 675 will begin by describing the formal aspects of management control such as the design of responsibility centers, budgets and standards, performance reports and management compensation. We will then explore the economic and financial reporting consequences (perhaps unintended) of various performance measurement mechanisms. In particular, we will focus on issues of short-termism, earnings, management, and attendant control failures that plague Corporate America today. Finally, we will discuss some of the regulatory changes brought about in recent times (e.g., Sarbanes Oxley) to address the apparent widespread control system failures.
PREREQUISITE: ACC 301 OR ACC 672 OR PERMISSION OF INSTRUCTOR

ACC677 Forensic Accounting
2 credits Fall & Spring Semester
This course provides an overview of fraud perpetrated against an organization, including employee theft, vendor fraud, customer fraud, and management fraud. You will learn how to investigate and quantify fraud, and how it can be detected and prevented as well as the accountants' role in litigation, such as acting as expert witness.
PREREQUISITE: ACC 312 AND ACC 402

ACC697 Ph.D. Colloquium
0 credit Offered By Announcement Only
Doctoral colloquium required of all Ph.D. students. Course serves as a forum for faculty, Ph.D. students, and visiting researchers to present their research and for Ph.D. students to critique and evaluate such research. Open only to Ph.D. students.
PREREQUISITE: OPEN ONLY TO PH.D. STUDENTS.

ACC698 Selected Topics
3 credits Offered By Announcement Only
Topics in selected areas of specialization.

ACC699 Directed Readings
1-3 credits Fall & Spring Semester & First & Second Summer Session
Individually supervised research projects in selected fields. Approval of supervising professor as to topic and evaluation of project required at time of registration.

ACC723 Topics in Empirical Accounting Research I
3 credits Fall Semester
This is the first course in Empirical Accounting Research for Ph.D. students. The course introduces students to the data sources; current techniques for accessing and analyzing accounting data; research methods employed in hypothesis testing; and the literature on positive accounting theory, accounting anomalies, institutional accounting, and disclosure. The emphasis will be on current research with a historical perspective.
ACC724 Topics in Empirical Accounting Research II  
3 credits  
Spring Semester  
This is the second course in Empirical Accounting Research for Ph.D. students. In this course, students will explore research on analyst forecasts and stock recommendations, industry research in accounting, and empirical research on compensation. The course will critically evaluate the theory, research design, and methodology employed in these studies. PREREQUISITE: ACC 723 TOPICS IN EMPIRICAL ACCOUNTING RESEARCH I, OR PERMISSION FROM THE INSTRUCTOR.

ACC730 Doctoral Dissertation  
1-12 credits  Offered By Announcement Only  
Required of all candidates for the PhD. The student will enroll for credit as determined by their advisor, but not for less than a total of 24. Not more than 12 hours of ACC 730 may be taken in a regular semester, nor more than six in a summer session. Where a student has passed their (a) qualifying examinations, and (b) is engaged in an assistantship, they may still take the maximum allowable credit stated above.

ACC750 Research in Residence  
0 credit  Offered By Announcement Only  
Used to establish research in residence for the PhD after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

BUSINESS

BUS598 SPECIAL TOPICS IN BUSINESS  
1-3 credits  Fall Semester  
Topics in selected areas of Business. PREREQUISITE: PERMISSION OF INSTRUCTOR

BUS600 Fundamentals of Critical Thinking and Effective Writing  
1 credit  Fall Semester  
Critical thinking skills are developed by studying questions that transcend any single business discipline. Utilizing a variety of written formats, students hone analytic and persuasive skills, with emphasis on identifying critical issues, developing reasoned positions, and making compelling written arguments.

BUS602 Critical Thinking and Effective Writing  
1 credit  Fall Semester  
Critical thinking skills are developed by studying questions that transcend any single business discipline. Utilizing a variety of written formats, students hone analytic and persuasive skills, with emphasis on identifying critical questions, developing reasoned positions, and making compelling written arguments.

BUS603 Critical Thinking and Effective Speaking  
1 credit  Fall & Spring Semester  
Builds on critical thinking and writing skills acquired in BUS 602. Topics include oral persuasion, prepared and impromptu speeches and dealing with the media, defending one's view before adversarial audiences, display of data, and effective use of visual aids. PREREQUISITE: BUS 600 OR BUS 602
BUS604 MBA Career Development and Enrichment  
0-1 credits    Fall & Spring Semester  
This course will expose students to a variety of academic and industry career lectures, events, and workshops to enhance their MBA experience. The focus is to establish added-value to an MBA student through real world and relevant access to information and resources beyond the traditional curriculum.

BUS605 Residential Session Abroad  
1-6 credits    Fall Semester  
One two-week session of the Global Executive MBA program is held abroad. During this corporate and international experience students attend lectures and institutional visits. This experience exposes students to other cultures and different perspectives on business issues, and widens international networking opportunities.

BUS620 Exchange Program- IE Business School- Madrid Spain  
1-16 credits    Fall Semester  
Course enrollment will vary based on student selection.  
PREREQUISITE: 2ND YEAR MBA STUDENT

BUS621 Exchange Program- Fudan University- Shanghai China  
1-16 credits    Fall Semester  
Course enrollment will vary based on student selection.  
PREREQUISITE: 2ND YEAR MBA STUDENT

BUS622 Global Business Project (GBP) - CIBER  
1-6 credits    Fall & Spring Semester  
The Global Business Project (GBP) is a collaborative course offered by participating CIBER schools to their MBAs and other interested graduate students. Students in related disciplines work in teams both virtually and in person on real business issues with multinational and local businesses and not-for-profits. Project supervision and final grade provided by Country Lead Professor CIBER.

BUS623 European Business Environment- International Trip  
1-4 credits    Fall & Spring Semester  
Course content, dates and location will vary from semester to semester at selected universities.

BUS624 Asian/Pacific Business Environment- International Trip  
1-4 credits    Fall & Spring Semester  
Course content, dates and location will vary from semester to semester at selected universities.

BUS625 Latin America Business Environment - International Trip  
1-4 credits    Fall & Spring Semester  
Course content, dates and location will vary from semester to semester at selected universities.

BUS626 Exchange Program- Tel Aviv University - Tel Aviv Israel  
1-16 credits    Fall Semester  
Course enrollment will vary based on students selection.  
PREREQUISITE: 2ND YEAR MBA STUDENT
BUS627 Exchange Program - IESE Business School - Barcelona Spain
1-16 credits    Fall Semester
Course enrollment will vary based on student selection.
PREREQUISITE: 2ND YEAR MBA STUDENT

BUS655 Public Policy and Health
3 credits                                                      First Summer Session
PREREQUISITE: LIMITED TO FMBA STUDENTS AND MD/MBAS

BUS698 Selected Topics
1- 6 credits    Fall & Spring Semester
Topics in selected areas of business.
PREREQUISITE: NONE.

BUSINESS LAW
BSL550 Business Law Internship
2- 3 credits   Offered By Announcement Only
Student is individually assigned to operating business firm or other organization to gain insight into management practice in area of career interest. Periodic reports and conferences are required. Approval of chairman required at time of registration. PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

BSL555 Business Law Honors Research Project.
0- 3 credits   Offered By Announcement Only
Research project to fulfill requirements for Departmental Honors in Business Law. PREREQUISITE: 3.9 GPA. SENIOR STANDING. PERMISSION OF INSTRUCTOR AND DEPARTMENT.

BSL575 Advanced Business Law
3 credits                                                           Spring Semester
Legal problems encountered by Certified Public Accountants, Finance, Management and Marketing Executives, including agency, commercial paper, bank deposits and collections, secured transactions, suretyship, bankruptcy, partnership, corporations, contracts, anti-trust, insurance, property, wills and estates, SEC law, and accountants' legal responsibility. Special attention is given to the commercial law segment of the Uniform Public Accountant Examination. PREREQUISITE: BSL 212 OR EQUIVALENT AND SENIOR STANDING. NOT FOR LST MAJORS OR BSL MINORS.

BSL612 Legal Aspects of International Business
3 credits                                                           Spring Semester
International legal framework, transactional legal issues in finance, marketing, management, distribution, and a review of theory and practice of negotiations. Case studies on such topics as legal implications of GATT, European Competition, C.I.S.G., and Export Import Rules are also included.

BSL685 Legal Aspects of Health Administration
3 credits                                                           Fall Semester
Derivation of rule of law governing health providers, vicarious liability of administrative and medical personnel, informed consent, and other related problems are discussed.
BSL690 Legal and Ethical Implications of Business Decision Making  
2 credits  
Fall & Spring Semester  
The course provides an introduction to our legal and governmental regulatory system, as well as a review of constitutional considerations for businesses. Morality and ethics are defined and distinguished. Applied philosophy is then introduced, to give the student a foundation upon which to analyze the ethical dimensions of common business questions. The relationship between the letter and the spirit of the law is examined. Specific business topics and their legal and ethical aspects are then addressed. This includes, but is not limited to, discussion of the following areas: consumer relationships; business organizations; the balancing of corporate vs. individual power (employee rights and responsibilities, employment discrimination); and the emerging ethic of a global economy.

BSL691 The Public Corporation: Legal Perspectives  
2 credits  
Fall Semester  
The Public Corporation: Legal Perspectives reviews the laws governing the formation, operation, regulation, and governance of the public corporation with the objective of providing the graduate business student a sophisticated examination of the legal and social aspects of managing the money of others. Further, the course examines the rules and regulations governing the raising of capital from the public through the sale of securities for the development of and investment in a private enterprise.

BSL692 Legal Implications of International Business Transactions  
2 credits  
Fall Semester  
International legal framework, transactional legal issues in finance, marketing, management, and distribution. Case studies in substantive international legal topics such as international sales contracts, international documentary sale, international terms of trade, legal implications and substantive rules governing international finance, collections, payments, and letter of credit, the resolution of international disputes with a particular emphasis and examination upon the management of litigation, enforcement of foreign judgments, and alternative dispute resolution are also included.

BSL693 Legal Principles of Commercial Contracting  
2 credits  
Offered By Announcement Only  
Course examines the fundamentals of all business dealings including the law of contracts. Reported court cases are presented and analyzed in order to assist the student's understanding of basic commercial contracting principles. This methodology is intended to develop the graduate student's critical thinking process as well as their skills in oral and written communication.

BSL694 Real Estate Law  
2 credits  
Fall Semester  
Real Estate Law focuses on the U.S. legal system as it relates to the buying, selling, and financing of real property. In addition to traditional text material, the analysis of U.S. court cases is used to detail the legal factors of ownership rights and liabilities, specific interests in real property, contracting issues related to the purchase and sale of real property, as well as financing and closing the real estate transaction. The course provides a problem-solving experience, which is intended to develop graduate students' critical thinking process as well as their skills in oral and written communication.
BSL695 Legal Implications in Executive Decision Making

3 credits  Offered By Announcement Only

Law and legal process are examined as they mix with the politics and ethics of business, including the weight given to legal implications in the executive decision-making process.

BSL696 Legal and Ethical Implications in Executive Decision Making

3 credits  Offered By Announcement Only

Business and public administration cases requiring identification of the legal, ethical, and social elements as well as the determination of the weight such elements should have in setting policy are discussed. Integration of law and ethics with public and business administration is also included.

BSL698 Selected Topics

1- 3 credits  Offered By Announcement Only

Topics in selected areas of specialization.

PREREQUISITE: PERMISSION OF DEPARTMENT CHAIR.

COMPUTER INFORMATION SYSTEMS

CIS550 Computer Information Systems Internship

1- 3 credits  Fall & Spring Semester & First & Second Summer Session

Student is individually assigned to operating business firm or other organization to gain insight in information technology practice in the area of career interest. Periodic reports and conferences are required.

PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN. FOR CREDIT ONLY.

CIS555 Computer Information System Honors Research Project.

0- 3 credits  Offered By Announcement Only

Research project to fulfill requirements for Departmental Honors in Computer Information Systems.

PREREQUISITE: 3.9 GPA. SENIOR STANDING. PERMISSION OF INSTRUCTOR AND DEPARTMENT.

CIS590 Topics in Computer Information Systems

1- 3 credits  Offered By Announcement Only

Topics in selected areas of specialization.

CIS591 Topics in Computer Information Systems

1- 3 credits  Offered By Announcement Only

Topics in selected areas of specialization.

CIS592 Topics in Computer Information Systems

1- 3 credits  Offered By Announcement Only

Topics in selected areas of specialization.

CIS593 Topics in Computer Information Systems

1- 3 credits  Offered By Announcement Only

Topics in selected areas of specialization.

CIS594 Topics in Computer Information Systems

1- 3 credits  Offered By Announcement Only

Topics in selected areas of specialization.

CIS595 Topics in Computer Information Systems

1- 3 credits  Offered By Announcement Only

Topics in selected areas of specialization.
CIS596 Topics in Computer Information Systems
1-3 credits Offered By Announcement Only
Topics in selected areas of specialization.

CIS597 Topics in Computer Information Systems
1-3 credits Offered By Announcement Only
Topics in selected areas of specialization.

CIS598 Topics in Computer Information Systems
1-3 credits Offered By Announcement Only
Topics in selected areas of specialization.

CIS599 Topics in Computer Information Systems
1-3 credits Offered By Announcement Only
Topics in selected areas of specialization.

CIS610 Foundations of Management Information Systems
2 credits Spring Semester
Course is designed to provide the foundations in management information systems information systems required to understand and effectively use an enterprise wide information system. Topics include the role of the CIO, managing Information Technology (IT) as a strategic resource, business process reengineering, IT planning, IT governance and communication, the Internet, and eBusiness.

CIS612 Enterprise Technologies
2 credits Offered By Announcement Only
Course addresses the needs of business students who wish to expand their understanding of information technology fundamentals. Focusing upon their use in today's enterprises, the course aims to provide students with knowledge of a variety of technological concepts commonly used in the IT Organization's systems development initiatives and enables students to understand the implications of deploying such technologies within the enterprise.

CIS613 Business Intelligence Technologies
2 credits Offered By Announcement Only
Course facilitates business decision makers in their understanding of data analysis tools that operate over data warehouses and 'data marts' more commonly referred to as Business Intelligence. Course focuses upon using technologies to drive effective data driven decision making through effective mining of corporate data warehouses, thus improving operational efficiency and ultimately increasing profitability. Students are exposed to the concepts, analysis techniques, data cubes, and manipulation of information extracted from a data warehouse that enables the formulation and execution of business strategies. Data analysis case studies are used to reinforce students' understanding and strategic use of results to accomplish business objectives.

CIS616 IT Systems Modeling
2 credits Offered By Announcement Only
Overview of the systems development life cycle (SDLC). Topics include concepts, tools, and techniques of systems analysis modeling with an emphasis on data and process modeling. Modeling is accomplished by using both structured and object-oriented tools and techniques. Students work in groups to model an application system for a business related problem using CASE tools.
CIS617 Information Technology Project Management
2 credits Fall Semester
Course covers the identification and development of information technology plans for projects supporting the organization's business objectives and all activities required in the initiating, planning, executing, controlling, and closing phases of the project's lifecycle. Course is intended to provide the body of knowledge and best practices necessary for a new Consultant, Business Analyst or Project Manager to successfully perform his/her responsibilities on a wide variety of IT enterprise projects.

CIS618 IT Security for Managers
2 credits Offered By Announcement Only
This course provides a systematic and practical approach for establishing, managing and operating a comprehensive Information Assurance (IA) program. It is designed to provide INFOSEC managers, IT managers, CIOs, Business owners, organizations that provide the outsourcing of IT, organizational senior and general managers with an understanding of the essential issues required to develop and apply a targeted information security posture for both public and private corporations and government-run agencies.

CIS620 Information Systems Analysis and Design
3 credits Offered By Announcement Only
Overview of the systems development life cycle (SDLC). Topics include concepts, tools, techniques of systems analysis and design, data modeling, process modeling, prototyping, file/database design, physical process modeling, CASE tools, and the role of the system analyst in the organization. Students work in groups to analyze and design an application system for a business related problem.
PREREQUISITE: KNOWLEDGE OF A HIGH LEVEL PROGRAMMING LANGUAGE.

CIS621 Management Information Systems
3 credits Offered By Announcement Only
Course is designed to give prospective managers a foundation in MIS sufficient to understand and effectively use information systems. Topics include types of information systems, role of MIS in organizations, CIO issues, ERP systems, and electronic commerce.

CIS630 Fundamentals of Local and Wide Area Networks
3 credits Offered By Announcement Only
Course provides the graduate student the necessary knowledge to understand the design, integration, technologies, and services of local and wide area networks (LANs and WANs) in the business environment. Topics include signal transmission and propagation, standards and protocols, data communications media and devices, layered/encapsulated communications based on the hybrid TCP/IP-OSI standards, small and large-site PC LANs, Frame Relay, ATM, Virtual Private Networking (VPN), Telephony, Internet technologies, and network security.

CIS631 Computer and Network Security
3 credits Offered By Announcement Only
Protection of computers and networks against unauthorized access, access control, encryption, firewalls, proxy, digital certificates, and software security are discussed.
PREREQUISITE: A HIGH-LEVEL PROGRAMMING LANGUAGE COURSE WITH A GRADE OF C OR BETTER AND CIS 630 (OR EQUIVALENT).
CIS640 Data Communications and Networking
3 credits Offered By Announcement Only
Course addresses advanced topics in computer networks from the perspective of a business decision-maker. The course begins with a focus on signal propagation, media characteristics, and digital and analog encoding techniques. It continues with a study of datalink, network, and transport layer functions as defined by the OSI and TCP/IP models. The architecture of the Internet is explored and routing algorithms for wired, wireless, and peer-to-peer networks are introduced. Course concludes with a high-level overview of the top OSI layers. After taking the class the students should be able to critically evaluate network solutions based on the capabilities and limitations of the equipment.
PREREQUISITE: CIS 630 (OR EQUIVALENT) OR PERMISSION OF INSTRUCTOR.

CIS646 IT Planning and Project Management
3 credits Offered By Announcement Only
Course covers the development of information technology strategic and tactical plans for projects supporting the organization's business objectives and project management as applied to planning, implementing, controlling networking, information systems and e-commerce projects. Course is intended to provide a body of knowledge necessary for a new Consultant or Project Manager to successfully initiate, plan, manage, control, and report on a variety of project types. People skills required in the areas of team selection, structure, conflict resolution, and leadership is also covered.
PREREQUISITE: A PRIOR GRADUATE LEVEL CIS OR IT COURSE.

CIS650 Advanced Topics in Database
3 credits Offered By Announcement Only
In depth treatment of database design and performance, data administration, dictionaries, distributed database, database machines, and other current database topics.
PREREQUISITE: CIS 423 OR EQUIVALENT.

CIS660 Computer Information Systems Graduate Internship
1- 3 credits Offered By Announcement Only
Student is individually assigned to an operating business firm or other organization to gain insight and experience in information technology practice in area of career interest. Periodic reports and conferences are required. This course can only be taken as "satisfactory/unsatisfactory."
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

CIS661 Introduction to Expert Systems for Management
3 credits Offered By Announcement Only
An introduction to the fundamental techniques of Artificial Intelligence (AI) that are used in the creation of expert systems. The techniques include problems as game trees and knowledge engineering and management of expert system projects.
PREREQUISITE: A HIGH-LEVEL PROGRAMMING LANGUAGE COURSE WITH A GRADE OF C OR BETTER OR PERMISSION OF INSTRUCTOR.

CIS680 Topics in Computer Information Systems
3 credits Offered By Announcement Only
Topics in selected areas of specialization.

CIS681 Topics in Computer Information Systems
3 credits Offered By Announcement Only
Topics in selected areas of specialization.
CIS682 Topics in Computer Information Systems
3 credits
Topics in selected areas of specialization.  
Offered By Announcement Only

CIS683 Topics in Computer Information Systems
3 credits
Topics in selected areas of specialization.  
Offered By Announcement Only

CIS684 Topics in Computer Information Systems
3 credits
Topics in selected areas of specialization.  
Offered By Announcement Only

CIS685 Topics in Computer Information Systems
3 credits
Topics in selected areas of specialization.  
Offered By Announcement Only

CIS686 Topics in Computer Information Systems
3 credits
Topics in selected areas of specialization.  
Offered By Announcement Only

CIS687 Topics in Computer Information Systems
3 credits
Topics in selected areas of specialization.  
Offered By Announcement Only

CIS688 Topics in Computer Information Systems
3 credits
Topics in selected areas of specialization.  
Offered By Announcement Only

CIS689 Topics in Computer Information Systems
1-3 credits
Topics in selected areas of specialization.  
Offered By Announcement Only

CIS690 Directed Study in Computer Information Systems
1-3 credits
Investigation and research in special areas of interest. Offered by special arrangement.  
PREREQUISITE: APPROVAL OF SUPERVISING PROFESSOR AND DEPARTMENT CHAIRMAN.

CIS691 Directed Study in Computer Information Systems
1-3 credits
Investigation and research in special areas of interest. Offered by special arrangement.  
PREREQUISITE: APPROVAL OF SUPERVISING PROFESSOR AND DEPARTMENT CHAIRMAN.

CIS692 Directed Study in Computer Information Systems
1-3 credits
Investigation and research in special areas of interest. Offered by special arrangement.  
PREREQUISITE: APPROVAL OF SUPERVISING PROFESSOR AND DEPARTMENT CHAIRMAN.

CIS699 Directed Study
1-3 credits
Offered by special arrangement.  
PREREQUISITE: APPROVAL OF SUPERVISING PROFESSOR AND DEPARTMENT CHAIRMAN.
CIS710 Master's Thesis
1-6 credits Offered By Announcement Only
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

CIS725 Continuous Registration--Master's Study
0 credit Offered By Announcement Only
To establish residence for non-thesis master's students who are preparing for major examinations. Credit not granted. Regarded as full time residence.

CIS730 Doctoral Dissertation
1-12 credits Offered By Announcement Only
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor but not for less than a total of 24. Not more than 12 hours of CIS 730 may be taken in a regular semester, or more than six in a summer session. Where a student has passed his/her (a) qualifying examinations, and (b) is engaged in an assistantship, he/she may still take the maximum allowable credit stated above.

CIS750 Research in Residence
0 credit Offered By Announcement Only
Used to establish research in residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

ECONOMICS
ECO507 Taxation and Government Expenditure
3 credits Offered By Announcement Only
The incentive and equity effects of taxation and public expenditures. Efficiency aspects of various tax and expenditure programs and the application of cost-benefit analysis to such areas as health, education, and welfare programs, both domestic and foreign, are discussed.
PREREQUISITE: ECO 302.

ECO510 Mathematical Economics
3 credits Fall Semester
Introduction to mathematical techniques commonly employed in economic analysis. Topics include simultaneous linear equation systems, linear algebra, and expansions of polynomials, logarithmic and exponential equations, differential calculus, and optimization theory. A substantial part of the course focuses on the comparative static analysis of both macroeconomic and microeconomic problems.
PREREQUISITE: A SEMESTER COURSE IN CALCULUS, ECO 301 AND 302.

ECO511 Labor Economics (II)
3 credits Spring Semester
A theoretical and empirical analysis of how labor markets operate. A survey of the literature, problems, and methodology of modern labor economics. Human capital analysis, the wage structure, job search and job-matching models, time-allocation models, the economic impact of labor unions, labor market discrimination, the determinants of labor demand and supply, and the factors affecting government policy relating to the labor sector is also included.
PREREQUISITE: ECO 302.
ECO512 Mathematical Economics (II)  
3 credits  
Spring Semester
Economics 512 will be sequential to the introductory Mathematical Economics I (ECO 510). Topics include integral calculus, differential equations, difference equations, Kuhn-Tucker conditions, and solutions to general equilibrium systems, optimization under uncertainty, and an introduction to dynamic optimization. Applications of mathematical techniques to economic analysis will be stressed.  
PREREQUISITE: ECO 510 OR ITS EQUIVALENT.

ECO520 Econometrics  
3 credits  
Fall Semester
Statistical methods of estimating and testing mathematical model of economic relationships. 
PREREQUISITE: ECO 301 AND 302, A COURSE IN STATISTICS AND PERMISSION OF INSTRUCTOR.

ECO521 Graduate Macroeconomic Theory  
3 credits  
Fall Semester
The primary objective of this course is to introduce the student to the mathematical presentation of the major Classical, Neo-classical, Keynesian, and Neo-Keynesian macroeconomic models. 
PREREQUISITE: INTERMEDIATE MACROECONOMIC THEORY AND PERMISSION OF INSTRUCTOR.

ECO532 History of Economic Thought  
3 credits  
Offered By Announcement Only
Historical development of economic doctrines and theory. Topics and individuals discussed include mercantilism, physiocracy, Adam Smith, Thomas Malthus, David Ricardo, J. S. Mill, Karl Marx, marginal analysis, Alfred Marshall, and J. M. Keynes. Special emphasis is placed on the effect of historical insights upon the contemporary core of economic theory. 
PREREQUISITE: ECO 301 AND 302.

ECO533 Advanced Microeconomic Theory  
3 credits  
Fall Semester
An introduction to the mathematical approach to microeconomic theory. Topics include consumer/household behavior, the theory of the firm, resource allocation, welfare economics, and uncertainty theory. 
PREREQUISITE: ECO 302, AND PERMISSION OF INSTRUCTOR.

ECO545 Natural Resources Economics II  
3 credits  
Offered By Announcement Only
This course surveys the economics of natural resource use, and is targeted to upper-division undergraduate and graduate students in economics. Topics include the economics of pollution control, the application of cost/benefit analysis to the marine environment, the economics of non-renewable and renewable resource extraction, and international environmental problems. 
PREREQUISITE: ECO 345 or MAF 502.

ECO555 Economics Honors Research Project  
0-3 credits  
Offered By Announcement Only
Research project to fulfill requirements for Departmental Honors in Economics. 
PREREQUISITE: 3.9 GPA, SENIOR STANDING, PERMISSION OF INSTRUCTOR AND DEPARTMENT.
ECO586 Economics of Health
3 credits
Offered By Announcement Only
A survey of the literature on the health care market. Economic theory is used to analyze public policy alternatives.
PREREQUISITE: ECO 302 OR 691, OR CONSENT OF INSTRUCTOR.

ECO603 Monetary Theory and Policy
3 credits
Fall Semester
Current monetary theory and its use and application in fiscal and monetary policymaking. Topics include the rational expectations hypothesis, time inconsistency, and the role of the government budget constraint.
PREREQUISITE: ECO 621.

ECO604 Topics in Applied Macroeconomics
3 credits
Offered By Announcement Only
Course acquaints students with current, substantive issues in macroeconomics. Topics include consumption determination, savings behavior, bequest behavior, fiscal policy effects on interest rates, consumption, real exchange rates, trade balances, and inflation.
PREREQUISITE: GRADUATE LEVEL MICROECONOMICS AND MACRO-ECONOMICS, AND AT LEAST ONE COURSE IN ECONOMETRICS OR CONSENT OF INSTRUCTOR.

ECO611 Labor Economics (III)
3 credits
Offered By Announcement Only
The formulation and testing of models of labor markets. The application of the tools of microeconomics and econometrics to the analysis of labor markets. Leading contributions in the areas of dynamic analysis of labor markets, human capital investment, the determinants of the wage structure, time allocation and search models, dual and internal labor market models, and analysis of government policy are discussed.
PREREQUISITE: ECO 520, 633 AND 511 OR THE PERMISSION OF THE INSTRUCTOR

ECO620 Advanced Econometrics
3 credits
Spring Semester
Advanced econometric methods including advanced techniques in multiple regression, Bayesian methods, maximum likelihood estimators, distributed lag models, spectral analysis, and Monte Carlo studies are discussed.
PREREQUISITE: ECO 520 OR PERMISSION OF INSTRUCTOR.

ECO621 Advanced Macro Analysis
3 credits
Spring Semester
Theory of the determination of national income, employment, and price levels. Course emphasizes mathematical solutions of Classical, Keynesian, and other economic models.
PREREQUISITE: ECO 301 AND 302. A COURSE IN CALCULUS REQUIRED.

ECO625 Applied Econometrics
3 credits
Fall Semester
Practical applications of econometrics are surveyed. Computer packages are used to examine economic data. Topics include the series analysis, limited dependent variable modes, pooling cross section and time series data, model selection, and rational expectations models.
PREREQUISITE: ECO 620.
ECO633 Advanced Micro Analysis
3 credits
Spring Semester
Theory of the behavior of firms and households and the determination of prices and resource allocation in a decentralized economy.

ECO634 Advanced Micro Analysis II
3 credits
Fall Semester
Continuation of ECO 633. Advanced analysis of theory of the household and firm emphasizing recent approaches. Analysis of decisions over time, duality relationships, advanced demand theory, risk and uncertainty, behavioral theories of the firm, and technological change are covered.
PREREQUISITE: ECO 633.

ECO635 Special Topics in Advanced Microeconomic Theory
3 credits
Spring Semester
Examination of situations where welfare economics associated with a perfectly competitive market must be modified and where non-market rationing devices are often used. Emphasis is placed on allocation structures that may supplement the market mechanism, such as: government, non-profit enterprises, and the family.
PREREQUISITE: ECO 621 AND 633.

ECO641 Problems of Economic Development
3 credits
Offered By Announcement Only
Economic change and growth in relation to theory and empirical evidence. Emphasis is placed on problems of actual vs. potential output and income of developing countries. Discussion of policies associated with promoting the full use of productive resources under various internal and external constraints is also included.

ECO642 Inflation and Financial Markets in Developing Countries
3 credits
Offered By Announcement Only
Monetary and financial aspects of economic development and stabilization policies in the Third World. Topics include rural financial markets, savings mobilization, effects of interest rate restrictions, and the political economy of financial policies in Third World countries.
PREREQUISITE: INTERMEDIATE ECONOMICS; ECO 301; 302; OR PERMISSION OF INSTRUCTOR.

ECO660 International Trade
3 credits
Offered By Announcement Only
The theory and practice of international trade. Comparative advantage, tariffs, quotas, non-tariff barriers (NTBs) to trade, and the regulatory framework (GATT/WTO, the US Harmonized Tariff Schedule, customs clearance procedures, special trade regimes free-trade zones, bonded warehouses, and letters of credit) are discussed.
PREREQUISITE: ECO 660 OR EQUIVALENT BY WAIVER.

ECO661 International Economics II
3 credits
Spring Semester
Continuation of ECO 660. Modern developments in pure trade theory, international factor movements, the external adjustment mechanism, policies for external and internal balance, trade and growth, and recent developments in international monetary relations are discussed.
PREREQUISITE: ECO 660.
ECO665 Economic Analysis of Law
3 credits
Offered By Announcement Only
Economic analysis of the evolution, nature, and consequences of the law, including liability rules, contractual and exchange relations, and remedies.

ECO675 Economic Problems of Latin America
3 credits
Offered By Announcement Only
Analysis of the economic, political, and social forces at work in the changing economies in Latin America.

ECO680 Essentials of Economics
2 credits
Fall Semester
Course provides an introduction to the core concepts of economics. Topics include allocation of scarce resources by the laws of supply and demand, use of the market place as the principle organizing and distribution tool of the economy, externalities, and market failure. Pollution of the environment is treated as a needed correction to be done by public regulation through taxation and legislation. The principal forms of firm organization and dissolution are also discussed. Applications of the laws of supply and demand are made to forecasting demand and analyzing cost structure. The entry and exit of firms and the valuation of the firm is also covered.

ECO681 Directed Readings
1-3 credits
Offered By Announcement Only

ECO682 Macroeconomics
1 credit
Offered By Announcement Only
Course topics include the definition and measurement of full employment, price stability, economic growth, and Gross National Product. The definition and rationale for anti-inflationary and anti-recessionary fiscal and monetary policy is also covered.
PREREQUISITE: EXECUTIVE MBA ONLY.

ECO685 Managerial Decisions in a Global Economy
2 credits
Fall Semester
Modern techniques of economic analysis and decision science are applied management of the firm in a global environment. Business planning and the determinants of supply and demand are an integral part of the course. The principal forms of business organization and dissolution are reviewed. The major issues confronted by the firm: Principal-agent problem (or how to motivate managers to act in the best interest of the owners, the shareholders), moral hazard, discounting of free cash flow and terminal value, economies of scale and scope, and strategic management decision making are covered.

ECO687 Health Care Organization, Economics, and Ethics
3 credits
Offered By Announcement Only
Course provides insight into organizational and behavioral aspects of various sectors and agents within the health care industry. Understanding how such aspects affect performance measured in terms of both economic and ethical criteria is included.
PREREQUISITE: FOR MBA HEALTH ADMINISTRATION STUDENTS.
ECO690 Essentials of Economic Theory
3 credits Fall & Spring Semester & First & Second Summer Session
An economic study of the environment in which the decision making process takes place in management and the functional areas. Structured especially for students without an undergraduate background in economics. Credit not applicable toward 36-credit professional MBA component.

ECO691 Managerial Economics
3 credits Fall & Spring Semester & First & Second Summer Session
Application of economic analysis to the formulation and solving of management problems and the determination of business policy.
PREREQUISITE: ECO 690 OR EQUIVALENT AND MAS 110 OR EQUIVALENT.

ECO695 Global Economics
2 credits Spring Semester & First Summer Session
This is a course in global economics with focus on economic policies and country risk. We study the aggregate behavior of macroeconomics variables that are relevant for business decisions. We take into account the interaction of the national economy with the rest of the world. In other words, we do global economics and study the roles of monetary and fiscal policies in an open economy, foreign direct investment, and the exchange rate.

ECO698 Selected Topics
3 credits Fall & Spring Semester & First & Second Summer Session
Topics in selected areas of specialization.

ECO710 Master’s Thesis
1-6 credits Fall & Spring Semester & First & Second Summer Session
The student working on his/her master’s thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

ECO720 Research in Residence
0 credit Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master’s degree after the student has enrolled for the permissible cumulative total in ECO 710 (usually six credits). Credit not granted. May be regarded as full time residence.

ECO725 Continuous Registration--Master’s Study
0 credit Fall & Spring Semester & First & Second Summer Session
To establish residence for non-thesis master’s students who are preparing for major examinations. Credit not granted. Regarded as full time residence.

ECO730 Doctoral Dissertation
1-12 credits Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor but not for less than a total of 12. Not more than 12 hours of ECO 730 may be taken in a regular semester, or more than six in a summer session. Where a student has passed his/her (a) qualifying examinations, and (b) is engaged in an assistantship, he/she may still take the maximum allowable credit stated above.
ECO740 Research Project  
1-6 credits Fall & Spring Semester & First & Second Summer Session  
Required of all candidates for the Doctor of Arts degree. Student enrolls for credit as determined by advisor. Credit is not awarded until the doctoral project has been accepted. Total enrollment may not exceed six credits.

ECO750 Research in Residence  
0 credit Fall & Spring Semester & First & Second Summer Session  
Used to establish research in residence for the Ph.D. and D.A., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

ECO760 The Theory of International Trade  
3 credits Fall Semester  
PREREQUISITE: ECO 533, 633.

EXECUTIVE & SPECIAL PROGRAMS  
ESP500 Review Module  
0 credit Fall Semester  
A non-credit review session to provide students with the skills necessary to prepare for the successful completion of the common body of knowledge courses.

ESP501 Fundamentals of Accounting  
3 credits Spring Semester  
The generally accepted principles governing the preparation of financial reports, the use of accounting information systems in collecting financial, and cost data used in investment decisions and controlling an enterprise are discussed. PREREQUISITE: LIMITED TO STUDENTS IN OVERSEAS PROGRAMS.

ESP510 Introduction to Business Statistics  
3 credits First Summer Session  
Data analysis, probability concepts, distributions, sampling, estimation, hypothesis testing, simple and multiple regression, and correlation analysis are discussed. PREREQUISITE: LIMITED TO STUDENTS IN OVERSEAS PROGRAMS.

ESP521 Introduction to Information Systems  
3 credits Offered By Announcement Only  
Computer information system concepts, including spreadsheets, data management, and word processing. PREREQUISITE: LIMITED TO STUDENTS IN OVERSEAS PROGRAMS.

ESP551 Organizational Behavior  
3 credits Spring Semester  
Exploration of relevant concepts, research findings and pragmatic implications of the behavioral sciences for the management of complex socio-technical systems. PREREQUISITE: LIMITED TO STUDENTS IN OVERSEAS PROGRAMS.

ESP560 Fundamentals of Marketing  
3 credits Fall Semester  
Marketing problems experienced by top executives are examined. Fundamental problem-solving concepts are developed. Students consider problems of consumer needs, product planning, promotion, distribution, and pricing. The discovery and application of marketing management skills are developed through the use of cases and a major planning project. PREREQUISITE: LIMITED TO STUDENTS IN OVERSEAS PROGRAMS.
ESP590 Macro- and Microeconomics
3 credits  First Summer Session
An economic study of the environment in which the decision-making process takes 
place in management and the functional areas. Course is structured especially 
for students without an undergraduate background in economics.
PREREQUISITE: LIMITED TO STUDENTS IN OVERSEAS PROGRAMS.

ESP601 MBA Math Module
0-3 credits  Offered By Announcement Only
This course provides the student with the necessary mathematical skills to progress 
toward an MBA degree. The course begins with a review of algebra and continues 
with the fundamentals of differential and integral calculus. The focus is on applying 
these concepts in solving business problems.
PREREQUISITE: LIMITED TO STUDENTS IN THE EXECUTIVE M.B.A. PROGRAMS.

ESP700 Internship Directed Research
3 credits  Offered By Announcement Only
This course consists of a directed research done by the student within the company/country 
where his/her internship is practiced. The study will be supervised and graded 
by a faculty member. Project requires in-depth research into the company, its role 
in globalization, and the culture's role in the company structure and purpose.

ESP730 Doctoral Dissertation.
1-6 credits  Fall & Spring Semester & First & Second Summer Session
Required for all candidates for the Ph.D. program. The student will enroll for 
credit as determined by his/her advisor, but not for less than a total of 12. Not 
more than 12 hours of ESP 730 may be taken in a regular semester, nor more than 
six in a summer session.
PREREQUISITE: NONE

ESP734 Research Project
1-6 credits  Fall & Spring Semester & Second Summer Session
Individually supervised research project in selected field. Scope of work must 
be approved by supervision instructor prior to registration. Total enrollment may 
not exceed six credits.

ESP735 Research Project
1-6 credits  Offered By Announcement Only
Required of all candidates for the Add-On Master of Business Administration degree. 
Credit is not awarded until the project has been accepted. Total enrollment may 
not exceed six credits (option 1). Available to those students who have selected 
option 1 curriculum.
PREREQUISITE: MUST HAVE COMPLETED THE MASTER OF SCIENCE IN PROFESSIONAL MANAGEMENT 
PROGRAM.

ESP736 Research Project
1-6 credits  Offered By Announcement Only
Required of all candidates for the Add-On Master of Business Administration degree. 
Credit is not awarded until the project has been accepted. Total enrollment may 
not exceed six credits. May be regarded as full-time residence as determined by 
the Dean of the Graduate School. Available to those students who have selected 
option 2 curriculum.
PREREQUISITE: MUST HAVE COMPLETED THE MASTER OF SCIENCE IN PROFESSIONAL MANAGEMENT 
PROGRAM.
FIN546 Introduction to ARGUS for Real Estate Analysis  
1 credit  
**Fall Semester**  
Introduction to real estate ownership analysis using proprietary ARGUS assumptions for different property types, purchase and resale assumptions and preparing reports for buyers and investors.  
PREREQUISITE: UNDERGRADUATE SENIOR OR GRADUATE STATUS

FIN547 Advanced ARGUS and Excel for Real Estate Application  
2 credits  
**Spring Semester**  
Advanced topics in real estate analysis using Excel and ARGUS, including discounted cash flow and leverage models, modeling hard and soft development costs, partnership analysis and depreciation waterfalls.  
PREREQUISITE: FIN 546, UNDERGRADUATE SENIOR, OR GRADUATE

FIN555 Finance Honors Research Project  
0-3 credits  
Offered By Announcement Only  
Research project to fulfill requirements for Departmental Honors in Finance.  
PREREQUISITE: 3.9 GPA, SENIOR STANDING. PERMISSION OF INSTRUCTOR AND DEPARTMENT.

FIN590 Internship  
1 credit  
Offered By Announcement Only  
Student is individually assigned to operating business firm or other organization to gain insight into management practice in area of career interest. Periodic reports and conferences are required. Approval of department is required at time of registration. Note: FIN 590 is an elective and is not for credit toward the major.  
PREREQUISITE: FIN 303, 320 AND PERMISSION OF DEPARTMENT CHAIRMAN. REQUIRES DEPARTMENTAL APPROVAL. NOTE: DOES NOT COUNT AS CREDIT TOWARDS MAJOR.

FIN599 Directed Study  
3 credits  
Offered By Announcement Only  
Individually supervised research projects in selected finance topics. Approval of the Chairperson and advisor is required prior to registration.  
PREREQUISITE: FIN 302, 320. REQUIRES DEPARTMENTAL APPROVAL.

FIN602 Fundamentals of Finance  
3 credits  
**Fall & Spring Semester & First Summer Session**  
This is a core MBA course, devoted primarily to the area of finance. No prior background in finances is assumed. The course objective is to provide students with a conceptual framework for appreciating and understanding the problems facing the financial manager.  
PREREQUISITE: PRINCIPLES OF ECONOMICS, STATISTICS AND FINANCIAL ACCOUNTING.

FIN603 Advanced Corporate Finance  
3 credits  
**Fall & Spring Semester & First Summer Session**  
Applications in corporate finance. This class builds on the core MBA courses in our executive MBA program, especially Fundamentals of Finance (Finance 602). Topics include working capital management, financial planning, basic option valuation, agency theory, capital structure management, mergers and acquisitions, liabilities management and leasing. Note: required for Finance concentration.  
PREREQUISITE: FIN 602.
FIN620 Investment Analysis
3 credits Fall Semester
This course deals with theory and application of investment analysis. Topics include general stock trading, portfolio and risk-return theory, models of stock valuation, portfolio diversification, market efficiency, options and futures, bond valuation and bond portfolio strategy, general commodity investing, and personal financial planning.
PREREQUISITE: FIN 602.

FIN621 Portfolio Construction and Management
3 credits Offered By Announcement Only
The evolution of portfolio theory and practice and its role in modern investment management. Individual constraint models within the general capital market theory are included as well as empirical evidence, theoretical discussion, and practical exercises.
PREREQUISITE: FIN 602, 620.

FIN622 Financial Options and Futures
3 credits Offered By Announcement Only
Study of the theoretical development of models for pricing contingent claims in the field of finance. Application of theoretical results to the hedging of current and future assets and liabilities and to speculative strategies for the risk-averse, profit-maximizing entity are included.
PREREQUISITE: FIN 602, 620.

FIN630 International Finance
3 credits Offered By Announcement Only
The financing of international trade and capital placements. Restrictions on capital retrieval and problems of international liquidity related to the U.S. and non-U.S. firms are discussed as well as current developments in international banking, theory, and policy. Cases involving foreign capital commitments and transactions, especially Latin America are also included.
PREREQUISITE: FIN 602.

FIN631 International Financial Management
3 credits Offered By Announcement Only
Sources and uses of long and short term capital for international business applications and foreign currency markets. Financial decisions associated with international cash and capital budgeting, capital repatriation and taxation strategies, capital exposure and coverage, and multinational firm financial strategies are discussed. Lectures and cases are included.
PREREQUISITE: FIN 630.

FIN641 Valuation and Financial Decision Making
2 credits Fall & Spring Semester
Basic financial valuation. This is one of the core classes in finance for our regular MBA program. Topics include the financial environment; the time value of money; capital market efficiency; basic security valuation; risk, return and asset pricing; cost of capital; and an introduction to capital budgeting.
FIN642 The Financial Environment
2 credits  
Fall & Spring Semester
A continuation of FIN 641. Topics include an introduction to the global securities markets and foreign exchange, basic derivatives, real options, the security trading process, fixed income securities markets, the term structure, investment banking, and short-term financial management and planning.
PREREQUISITE: FIN 641.

FIN644 Real Estate Investment and Appraisal
3 credits  
Fall Semester
This course will introduce you to the theoretical concepts and analytical techniques used to make a decision to purchase an ownership interest in a commercial real estate project. There is heavy reliance on Excel applications and the use of the Argus database that is a standard resource in the commercial real estate market.
PREREQUISITE: FIN641 OR SCORE OF 80% OR ABOVE ON FIN641 WAIVER EXAM

FIN645 Real Estate Finance
3 credits  
Spring Semester
This course will introduce you to the theoretical concepts and analytical techniques used to make a decision to loan money for the purchase or development of a commercial real estate project.
PREREQUISITE: FIN641 OR SCORE OF 80% OR ABOVE ON FIN641 WAIVER EXAM

FIN650 Financial Investment
2 credits  
Fall & Spring Semester
This course builds on FIN 641 and FIN 642 to provide a more advanced knowledge of the field of investments, particularly the fixed income markets, portfolio construction, asset pricing, and behavioral biases affecting financial decisions.
PREREQUISITE: SECOND YEAR MBA STATUS. FIN 641

FIN651 Advanced Topics in Investments
2 credits  
Fall & Spring Semester
This course is about applying finance theory to the practice of investments. Topics include building a term structure model, building a fixed income portfolio, performance standards and measurement, and the role of futures and options in portfolios.
PREREQUISITE: FIN 650. SECOND YEAR MBA STATUS.

FIN660 International Finance
2 credits  
Fall & Spring Semester
Finance 660 builds on Finance 641 and 642, and introduces students to the concepts that are important in today's dramatically changing global economy. The course covers the international monetary system; the interrelationship between national economies through the balance of payments; the economic relationships that determine a currency's value relative to other currencies and real goods; the markets and instruments of international finance; currency crises and contagion; the hedging of international risk exposure; and international portfolio investment.
PREREQUISITE: FIN 641,642. SECOND YEAR MBA STATUS.
FIN661 Advanced Topics in International Finance  
2 credits  
Fall & Spring Semester  
Finance 661 builds directly on Finance 660 and on the MBA core classes, Finance 641 and 642, using a variety of techniques, including group projects and class discussion. A number of special topics are covered including measuring and managing the many additional risk exposures faced by a multi-national enterprise, investment decisions in a global framework, and financing the multi-national firm.  
PREREQUISITE: FIN 641, 642. SECOND YEAR MBA STATUS.

FIN670 Corporate Finance  
2 credits  
Fall & Spring Semester  
Finance 670 builds on Finance 641 and 642 and focuses on financial decision making from a corporation's perspective. Issues addressed include capital structure, management of corporate liabilities, leasing and other asset-based financing techniques, advanced treatment of capital budgeting and some of the complex issues involved, and corporate mergers and acquisitions.  
PREREQUISITE: FIN 641 AND 642. SECOND YEAR MBA STATUS.

FIN671 Advanced Topics in Corporate Finance  
2 credits  
Fall & Spring Semester  
This course builds directly on Finance 670 and on the MBA core classes, Finance 641 and Finance 642, and relies mainly on the analysis and vigorous class discussion of a variety of real-world cases. The cases cover a broad range of topics, including short-and long-term financing, capital budgeting decisions, corporate valuation, hedging with options and futures, dividend policy and share repurchases, corporate financial strategy, and other current issues in corporate finance.  
PREREQUISITE: FIN 670. SECOND YEAR MBA STATUS.

FIN674 Financial analysis of mergers and acquisitions  
2 credits  
Spring Semester  
This course is designed to develop an understanding of (1) the economic and financial issues involved in the acquisition of a company; (2) the analytical valuation tools used to evaluate an acquisition; and (3) potential and empirical stock market reaction to an acquisition. Students are then asked to apply their understanding of the issues to analyze cases involving various aspects of acquisition.  
PREREQUISITE: FIN 670, FIN 642, FIN 641

FIN681 Financial Institutions  
2 credits  
Fall & Spring Semester  
Finance 681 builds on Finance 641 and 642 and focuses on the management of financial institutions, such as banks. Topics include risk management, deposits and deposit insurance, liquidity, reserve requirements, capital adequacy, liability management, investment interest rate risk, and current issues connected with financial institutions.  
PREREQUISITE: FIN 641,642. SECOND YEAR MBA STATUS.

FIN683 Financial Modeling  
2 credits  
Fall Semester  
This course takes a variety of finance topics and implements them using practical spreadsheet models. Students will use the intent and financial databases to obtain input data for their models. Students will learn Visual Basic for Applications (VBA) to design functions and macros that will enhance their models. In addition to class time, this course will meet in a "computer lab" (a classroom) for hands-on instruction. Students are presumed to have a working knowledge of Windows and Excel.  
PREREQUISITE: FIN 641, FIN 642
FIN685 Mathematics of Financial Derivatives  
2 credits  
Fall & Spring Semester  
Finance 685 builds on Finance 650, 660, and 670. This course provides an in-depth mathematical treatment of derivatives and is divided into three parts: (1) options; (2) futures and forwards; and (3) other derivative instruments, which include options on futures, foreign currency derivatives, swaps, exotic options, and financial engineering. The emphasis is placed on equity instruments, although there is also some coverage of short- and long-term interest bearing instruments.  
PREREQUISITE: FIN 650, 660, 670. SECOND YEAR MBA STATUS.

FIN698 Selected Topics in Finance  
1- 3 credits  Offered By Announcement Only  
Topics in selected areas of specialization.  
PREREQUISITE: FIN 602.

FIN699 Directed Readings and Study  
1- 3 credits  Offered By Announcement Only  
Individually supervised research or reading projects in selected fields. Evaluation of project and subject by the supervising professor is required at the time of registration.  
PREREQUISITE: FIN 602.

FIN700 Doctoral Seminar in Finance Theory  
3 credits  
Offered By Announcement Only  
The purpose of this seminar is to provide doctoral students in economics and business with a rigorous introduction to the theory of finance.  
PREREQUISITE: MBA, MS OR APPROVAL OF DEPARTMENT.

FIN705 Doctoral Seminar in Corporate Finance  
3 credits  
Offered By Announcement Only  
The purpose of this seminar is to provide doctoral students with a comprehensive review of theory, empirical methods, and results in the area of corporate finance.  
PREREQUISITE: MBA, MS OR APPROVAL OF DEPARTMENT.

FIN720 Doctoral Seminar in Investments  
3 credits  
Offered By Announcement Only  
The purpose of this seminar is to provide doctoral students with a comprehensive review of theory, empirical methods, and results in the area of investments.  
PREREQUISITE: MBA, MS OR APPROVAL OF DEPARTMENT.

MANAGEMENT SCIENCE  
MAS547 Computer Simulation Systems  
3 credits  
Fall Semester  
Introduction to discrete-event computer simulation and hands-on development of simulation models. Topics include introduction to queuing theory, input and output analysis, random number generation, and variance reduction techniques. Students practice their modeling skills using commercial state-of-the-art simulation software. Assigned readings of real-life simulation projects complement the material learned in the classroom. Lecture, 3 hours.  
PREREQUISITE: MAS/IEN 311 OR EQUIVALENT.
MAS548 Data Mining and Knowledge Acquisition  
3 credits  
Spring Semester  
This course provides an introduction to the principles and techniques of data mining. Topics covered include the data mining process, data preprocessing, data mining techniques and data mining evaluation. The course will involve a combination of lectures, labs, projects and case studies. 
PREREQUISITE: MAS 201 & MAS 202

MAS550 Management Science Internship  
1- 3 credits  
Fall & Spring Semester & First Summer Session  
Student is individually assigned to operating business firm or other organization to gain insight into management practice in area of career interest. Periodic reports and conferences are required. Permission of department chair is required prior to registration. 
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN. FOR CREDIT ONLY.

MAS555 Management Science Honors Research Project.  
0- 3 credits  
Offered By Announcement Only  
Research project to fulfill requirements for Departmental Honors in Management Science. 
PREREQUISITE: 3.9 GPA. SENIOR STANDING. PERMISSION OF INSTRUCTOR AND DEPARTMENT.

MAS595 Topics in Management Science  
1- 3 credits  
Fall & Spring Semester & First Summer Session  
Topics in selected areas of specialization.

MAS596 Topics in Management Science  
1- 3 credits  
Fall & Spring Semester & First Summer Session  
Topics in selected areas of specialization.

MAS601 Applied Regression Analysis  
3 credits  
Fall Semester  
Theory and practical application of regression modeling and analysis. Computer control language, text editing, data base manipulation, and use of various data scales are covered. Understanding the role and responsibility of a statistician is also included. 
PREREQUISITE: CALCULUS, LINEAR ALGEBRA AND MAS 311 OR EQUIVALENT.

MAS602 Applied Multivariate Statistics  
3 credits  
Spring Semester  
Statistical analysis of simultaneous measurements on many variables. Topics include principle components, factor analysis, canonical correlation analysis, multivariate general linear model, discriminant analysis, clustering, multidimensional scaling, and statistical inference about mean vectors. Extensive use of computer packages is required. 
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAS603 Design of Experiments  
3 credits  
Spring Semester  
Statistical design, analysis of experimental data, randomized blocks, Latin Squares, factorial designs, response surfaces, and analysis of covariance are covered. Extensive use of computer packages is required. 
PREREQUISITE: MAS 311 OR EQUIVALENT.
MAS606 Nonparametric Statistics
3 credits Offered By Announcement Only
Nonparametric techniques for testing hypotheses concerning proportions, attributes (enumeration statistics), two-sample and K-sample tests of location. Nonparametric correlation methods, two-sample variance tests, tests for runs and randomization, multiple comparisons, and linear and non-linear trend are also included. Emphasis is placed on utilization of techniques in research, and not formal theory.
PREREQUISITE: MAS 311 OR EQUIVALENT.

MAS607 Survey Sampling
3 credits Offered By Announcement Only
Course topics include random, stratified, systematic, and cluster sampling, applications in survey sampling design, and ratio estimation. Questionnaire design and administration including nonresponse problems, data analysis and presentation are also included.
PREREQUISITE: MAS 610 OR EQUIVALENT.

MAS610 Statistical Analysis for Managerial Decision Making
3 credits Fall & Spring Semester & First Summer Session
Data analysis, probability concepts, distributions, sampling, estimation, hypothesis testing, simple and multiple regression and correlation analysis. Required of all MBA students unless satisfied by a waiver examination or equivalent undergraduate course or courses.

MAS611 Principles of Quality Management
3 credits Fall Semester
The definition of quality management, its history, and comparison of various schools of thought. An introduction to the theories of systems, variation, knowledge, and psychology as they relate to quality management. Deming's fourteen points for management are studied through examples and cases.
PREREQUISITE: MAS 610.

MAS612 Advanced Quantitative Analysis
3 credits Fall & Spring Semester & First Summer Session
The application of probability theory to the formulation and analysis of mathematical models for decision making. Applications are taken from inventory control, forecasting, waiting lines, quality control, production, and operations management.
PREREQUISITE: MAS 201 AND 302 OR THEIR EQUIVALENTS.

MAS615 Statistical Methodology in Business Research I
3 credits Offered By Announcement Only
Foundations of statistical methods used in business research. Topics include distribution theory, estimation theory, point estimates, methods and properties, interval estimates, hypothesis testing, relationship between interval estimation and hypothesis testing, fundamental normal tests, decision theory, Bayesian inference. The use of the SAS computer package is required. The first of two required core courses in Statistical Methodology for Ph.D. students in Business.
PREREQUISITE: MAS 311 AND MTH 112 OR EQUIVALENTS.
MAS616 Statistical Methodology in Business Research II
3 credits
Offered By Announcement Only
Advanced Statistical techniques as applied to Business Research. Topics include
analysis of variance and covariance, multiple regression, correlation, discriminant
analysis, factor analysis, canonical correlation, and nonparametric statistical
methods. The second of two required core courses in Statistical Methodology for
Ph.D. students in Business.
PREREQUISITE: MTH 210 AND MAS 615 OR EQUIVALENTS.

MAS630 Quality Management in Practice
3 credits
Fall Semester
This course presents administrative systems necessary for an organization or an
individual to pursue quality management. The course presents a functional model
for quality management.
PREREQUISITE: MAS 611.

MAS631 Statistics for Managerial Decision Making
2 credits
Fall Semester
This course aims to familiarize the student with statistical theory, tools, and
methods required for business systems analysis and improvement. Topics include
descriptive methods, elementary probability, random variables and the distributions,
hypothesis testing, confidence intervals, statistical modeling, and regression.

MAS632 Management Science Models for Decision Making
2 credits
Spring Semester
This course aims to familiarize the student with Management Science tools for business
systems analysis and improvement. The coverage includes linear and integer programming
models, project management, simulation, queuing, and decision analysis. Some widely
used software are illustrated through examples and case studies derived from business
applications.
PREREQUISITE: MAS 631.

MAS633 Introduction to Quality Management
2 credits
Fall Semester
Introduction to the major elements of Dr. Deming's theory of management, including
Dr. Deming's System of Profound Knowledge and Fourteen Points for Management. Additionally,
participants are introduced to "Six Sigma" tools and methods. These tools and methods
have been adopted with great success by many of the largest organizations in the
world, for example, General Electric, Allied Signal, Dupont, American Express,
and J.P. Morgan. Additionally, the course is a prerequisite for the "Six Sigma"
Green Belt certification examination.
PREREQUISITE: MAS 631 OR PERMISSION OF INSTRUCTOR OR ADVISOR

MAS634 Administrative Systems for Quality Management
2 credits
Fall Semester
This course presents a model to pursue quality management (QM). It features administrative
systems and structures necessary for Quality Management. The administrative systems
and structures presented in this course are required to sit for the Six Sigma Management
"Green Belt" certification examination.
PREREQUISITE: SECOND YEAR MBA STATUS AND MAS 633.
MAS635 Design of Experiments
2 credits  Fall Semester
This course presents tools and methodology useful in conducting experiments that provide valid answers to questions of interest to the experimenter. The course discusses an overall approach to obtaining and analyzing experimental data, the advantages of using structured multi factor experiments to screen for important factors, ways of minimizing the amount of data points needed to obtain desired information, and how to identify values of experimental factors that optimize the value of measured responses. Factorial designs, fractional factorial designs, screening designs, and response surface designs are presented. Emphasis is placed on the knowledge required for proper application of these methods through many examples in business and quality management.
PREREQUISITE: MAS 631. SECOND YEAR MBA STATUS.

MAS636 Statistical Process Control and Reliability
2 credits  Fall Semester
This course aims to introduce some fundamental concepts of statistical process control and reliability with an emphasis on business applications. The first part of the course focuses on control charts and other tools that are used to monitor and improve business processes. The second part of the course introduces some basic ideas of reliability models and presents methods used in identifying failure modes in products and in business systems.
PREREQUISITE: MAS 631. SECOND YEAR MBA STATUS.

MAS637 Applied Regression Analysis and Forecasting
2 credits  Fall Semester
This course aims to familiarize the student with statistical prediction. It covers simple and multiple regression methods as well as time series and forecasting models in business. Instead of theoretical development, the course emphasizes the application of these methods in business systems analysis and improvement.
PREREQUISITE: MAS 631. SECOND YEAR MBA STATUS.

MAS638 Management Science Consulting
2 credits  Offered By Announcement Only
The purpose of this course is to enhance students' consulting skills in management science. In addition to skills of modeling and choosing appropriate tools for analysis, these include the communication skills of presenting quantitative and analytical material in business settings. The course is structured around a set of case studies that are based on real applications of management science models and methods discussed in MAS 631 and MAS 632.
PREREQUISITE: MAS 631 AND 632.

MAS641 Operations Research Models in Management
3 credits  Fall & Spring Semester & First Summer Session
The application of Operations Research techniques in Management. Topics include linear programming, PERT/CPM, queuing theory, forecasting, inventory models, statistical quality control, decision theory, and Simulation.
PREREQUISITE: MAS 610.
MAS642 Linear Programming and Extensions
3 credits
Fall Semester
Formulation, solution, and postoptimality analysis of linear programming problems. Topics include revised simplex, parametric programming, and decomposition large-scale systems. The use of computer packages is required. Introduction to integer programming, network flows, and nonlinear programming applications is also included.
PREREQUISITE: LINEAR ALGEBRA OR EQUIVALENT.

MAS643 Integer Programming and Network Flows
3 credits
Spring Semester
Solutions and applications of network flow problems, shortest path, maximum spanning tree, single, and multi-commodity flows are discussed. Computationally effective approaches to integer optimization, cutting planes, and implicit enumeration are also covered.
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

MAS644 Nonlinear and Dynamic Programming
3 credits
Offered By Announcement Only
Solution of nonlinear optimization problems by classical procedures and search algorithms. Recursive optimization using computationally effective techniques is also addressed.
PREREQUISITE: MTH 112 OR EQUIVALENT.

MAS645 Stochastic Processes
3 credits
Fall Semester
Introduction to discrete state Markov processes and renewal processes with applications to queuing, replacement, and reliability problems.
PREREQUISITE: MAS 311 OR MTH 524 OR EQUIVALENT.

MAS657 Supply Chain Management
3 credits
Spring Semester
This course covers models and techniques for design and implementation of distribution and supply chain networks, and how they relate to manufacturing. Topics include inventory management, resource and capacity planning, material planning, forecasting, routing and scheduling, and plant location. An overview of how these are incorporated in an integrated ERP system is provided.
PREREQUISITE: MGT 653 OR EQUIVALENT.

MAS661 Forecasting Methods
3 credits
Offered By Announcement Only
Business and economic forecasting, time series analysis, regression, classical decomposition, smoothing, Box-Jenkins methodology, use of index numbers, other indicator variables, and forecasting in functional business areas are discussed. The use of case studies and interactive computer packages is also included.
PREREQUISITE: MAS 610 OR EQUIVALENT.

MAS663 Project Management and Modeling
2 credits
Spring Semester
This course considers the various methods, techniques, and software tools of project management and modeling with special emphasis on real estate projects and development. Topics include: project selection and strategy, risk assessment, conflict and negotiation, budgets, costs, and resource allocation, monitoring and information systems, project control and auditing, and project closure. The course is designed to show the integration of the various roles of owners, developers, builders, architects, and engineers in the project management process.
MAS693 Directed Study in Operations Research
1-3 credits Offered By Announcement Only
Investigation and research in special areas of interest. Offered by special arrangement.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

MAS694 Directed Study in Operations Research
1-3 credits Offered By Announcement Only
Investigation and research in special areas of interest. Offered by special arrangement.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

MAS695 Directed Study in Operations Research
1-3 credits Offered By Announcement Only
Investigation and research in special areas of interest. Offered by special arrangement.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

MAS696 Directed Study in Statistics
1-3 credits Offered By Announcement Only
Investigation and research in special areas of interest. Offered by special arrangement.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

MAS699 Directed Study
1-3 credits Offered By Announcement Only
Offered by special arrangement.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

MAS710 Master's Thesis
1-6 credits Offered By Announcement Only
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

MAS720 Research in Residence
0 credit Offered By Announcement Only
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in MAS 710 (usually six credits). Credit not granted. May be regarded as full time residence.

MAS725 Continuous Registration--Master's Study
0 credit Offered By Announcement Only
To establish residence for non-thesis master's students who are preparing for major examinations. Credit not granted. Regarded as full time residence.

MAS730 Doctoral Dissertation
1-12 credits Offered By Announcement Only
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor but not for less than a total of 24. Not more than 12 hours of MAS 730 may be taken in a regular semester, or more than six in a summer session. Where a student has passed his/her (a) qualifying examinations, and (b) is engaged in an assistantship, he/she may still take the maximum allowable credit stated above.
MAS750 Research in Residence
0 credit                                               Offered By Announcement Only
Used to establish research in residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

MANAGEMENT

MGT540 Behavioral Aspects of Productivity
3 credits                                              Offered By Announcement Only
Productivity management impacts organizational strategy, efficiency, quality, and survival. Course examines these varied impacts and discusses the managerial issues related to productivity measurement, organizational values, incentives, gain sharing, motivation, organizational change, gain sharing, motivation, organizational change, and organizational politics. Course is taught from behavioral and systems theory viewpoints, focusing on how behavioral change impacts system productivity. Course is multidisciplinary and supplemented with examples of corporate applications.

MGT545 Self-Assessment and Career Development
3 credits                                              Offered By Announcement Only
Course provides a framework for individuals facing the complex process of making career decisions. Emphasis is placed on self-assessment to help students better understand their career motivations. Additional topics include job searches, interviewing, analyzing, choosing job offers, managing the first year on the job, developmental relationships such as mentoring, the early career experience, and managing a career over time.
PREREQUISITE: MGT 304 + SENIOR STANDING.

MGT550 MGT Internship
1 credit                     Fall & Spring Semester & First & Second Summer Session
Student is individually assigned to operating business firm or other organization to gain insight into management practice in area of career interest. Periodic reports and conferences are required. Cannot be used toward major requirements.
PREREQUISITE: MAJOR/SPECIALIZATION IN MGT DEPARTMENT, MINIMUM 3.0 GPA, AND DEPARTMENT CHAIR APPROVAL PRIOR TO REGISTRATION.

MGT598 Selected Topics
3 credits                    Fall & Spring Semester & First & Second Summer Session
Topics in selected areas of specialization.

MGT599 Directed Study
1-6 credits     Fall & Spring Semester & First & Second Summer Session
Individually supervised research projects in selected fields. Approval of supervising professor as to topic and evaluation of project required at time of registration. Only open to undergraduate students.
PREREQUISITE: SENIOR STANDING + MAJOR IN MGT DEPARTMENT.

MGT600 Managing Responsible Behavior in Organizations
3 credits                    Fall & Spring Semester & First & Second Summer Session
For Executive MBA students only. Course covers organizational behavior and utilizes cases and lectures to explore topics such as personality, motivation, leadership, group processes, organizational structure/design, and social responsibility.
PREREQUISITE: EXECUTIVE MBA STATUS.
MGT602 Human Resource Management
3 credits Fall & Spring Semester
Modern personnel administration: job analysis and design, evaluation and appraisal, recruitment and interviewing, training and development, wages and benefits, and health and safety. Unionization, regulation of wages, hours and working conditions, financial security for workers, job anti-discrimination legislation, and manpower planning is also discussed.

MGT603 Leading Teams
3 credits Fall & Spring Semester
The objectives of this course are to develop interpersonal communication and conflict management skills necessary to work in teams and/or exercise leadership in teams. Topics include team development, decision making, and diagnosing team process issues. PREREQUISITE: MGT 651.

MGT620 Managing Through People
2 credits Fall & Spring Semester
This core course in the MBA program introduces students to some of the key behavioral topics necessary to manage oneself and others in organizations. Specifically, the topics covered include individual attributes (personality, perception, motivation, relationship building), group processes (norms, roles, and team basics), leadership views, and organizational culture/change. An understanding of the relationship between each of these areas and organizational outcomes is enhanced through lecture, cases, and interactive exercises. PREREQUISITE: FULL-TIME MBA STATUS.

MGT621 High Performance Leadership
2 credits Fall & Spring Semester
Leadership skills are critical for high performing organizations. Course utilizes lecture, cases, exercises, self-assessments, and contemporary reading materials to present leadership approaches that both motivate and enable employees to perform beyond normal or ordinary expectations. Topics include followership and organizational culture, power, influence, rewards and punishments, path-goal and exchange theories, participation and empowerment, charismatic and transformational leadership, and contingency and cognitive resources theory. PREREQUISITE: FULL-TIME MBA STATUS, SPECIALIZATION IN LEADING THE HIGH PERFORMANCE ORGANIZATION.

MGT622 High Performance Teams
2 credits Fall & Spring Semester
This elective course highlights how to manage and construct effective teams to achieve strategic goals. Team-based organizations have been created to enhance organizational performance. The benefits of effective team leadership are performance beyond expectations and enhancement of learning for employees. Topics covered include team decision-making, team leadership, diversity in teams, conflict resolution, and team creativity. PREREQUISITE: FULL-TIME MBA STATUS, SPECIALIZATION IN LEADING THE HIGH PERFORMANCE ORGANIZATION.
MGT623 Human Resource Systems
2 credits  Fall & Spring Semester
Leaders must manage their human resource assets effectively to achieve high performance organizations. Course topics include recruitment and selection of high performance employees, designing performance appraisal systems, implementing policies to satisfy legal issues impacting human resources, and instituting training/development systems. PREREQUISITE: FULL-TIME MBA STATUS; SPECIALIZATION IN LEADING THE HIGH PERFORMANCE ORGANIZATION.

MGT624 Negotiation Strategies
2-3 credits  Fall & Spring Semester
PREREQUISITE: MGT 620

MGT625 Entrepreneurship: Creating New Ventures
2 credits  Fall & Spring Semester
This is a two-credit course for MBA students (only). The course is designed to help students understand the basic essentials for creating a new venture. Among some of the topics covered will be: preparation of a business plan, securing sources of capital, choosing and creating appropriate distribution channels, and understanding the complexities of selecting a management team. Students will be required to critique and develop business plans as a key evaluation component for this course. PREREQUISITE: MBA STANDING.

MGT628 Global Entrepreneurship
6 credits  Fall Semester
This seminar-type course is an advanced elective specially designed for graduate students either interested in starting their own firms or developing the skills with which to submit business plans within the corporate world (i.e., corporate entrepreneurship) in today's global, interdependent economy. Students will learn to assess the new venture opportunities that he/she may have considered and choose the one that seems most attractive and viable and develop a unique business model which enhances the plan's viability in the short term, and ensures the development of sustainable advantages in the long term. Each student will draft a comprehensive business plan after working on its functional components (e.g., marketing, finance, human and intellectual capital plans) to be developed throughout nine classes and several individual meetings along the program's academic calendar. At the end, students will present their business plans to a panel of new venture investors who will assess all projects, give individual feedback, and choose the best project(s).

MGT643 Principles of Operations Management
2 credits  Fall & Spring Semester
Introduction to operations management, forecasting, process analysis, aggregate planning, capacity management, waiting line management, system design, quality management, and inventory management. PREREQUISITE: FULL-TIME MBA STATUS.
MGT645 Principles of Supply Chain Management
2 credits  Fall & Spring Semester
Course introduces students to the business discipline of Supply Chain Management (SCM) which centers on concepts and techniques that enables firms to better coordinate material and information flows, and non-material activities associated with logistical and marketing processes that occur within and across organizations. Course also discusses concepts and recent influential innovations in SCM (e.g., Cross-Docking, Vendor Managed Inventory (VMI), Third-Party Logistics (3PL), Efficient Consumer Response (ECR), and Quick Response (QR)).
PREREQUISITE: MGT 643, MAS 632. SECOND YEAR MBA STATUS.

MGT651 Behavioral and Organizational Systems
3 credits  Fall & Spring Semester
Exploration of relevant concepts, research findings, and pragmatic implications of the behavioral sciences for the management of complex socio-technical systems.

MGT653 Operations Management
3 credits  Fall & Spring Semester
Introduction to major managerial problems and decision processes of operations management. Topics include the design of operations, planning, scheduling, quality control, systems analysis and evaluation, resource allocation, materials requirement planning, and integration of operations management with the other functional areas.

MGT654
3 credits  Fall & Spring Semester
PREREQUISITE: MGT 653.

MGT655 Research Methods
3 credits  Offered By Announcement Only
Course addresses the fundamentals of research in business including exploratory designs, correlational and multivariate designs, experimental and non-experimental studies, measurement theory, internal and external validity considerations, and ethical requirements in conducting organizational research.
PREREQUISITE: MGT 656 AND DOCTORAL STUDENT STANDING.

MGT656 Seminar: Organizational Behavior
3 credits  Offered By Announcement Only
Seminar addresses the current research and theoretical foundations in organizational behavior. Topics include individual attributes, job attitudes, leadership, motivation, and group processes.
PREREQUISITE: DOCTORAL STUDENT OR PERMISSION OF INSTRUCTOR.

MGT658 Strategic Management
3 credits  Fall & Spring Semester
The formulation and implementation of strategy, from a domestic and international perspective, is explored through cases, readings, and decision simulation. An integration of all the core areas of business is emphasized. This core course is required of all MBA students.
PREREQUISITE: GRADUATING SEMESTER MBA STUDENTS ONLY.
MGT659 Management of Multinational Enterprise
3 credits  Fall & Spring Semester
Analysis of the management tasks confronting managers operating in the international arena presented from both an environmental and an operational perspective. Alternatives for overall corporate policy and strategy that accommodate global operations is also included.

MGT660 Leadership and Motivation in Organizations
3 credits  Fall & Spring Semester & First Summer Session
Selected topics pertaining to leadership, motivation, and individual processes are surveyed through selected readings, class discussions, and a guided research project. Students' ability to conceptualize, integrate, and apply diverse approaches to the leadership and motivation of people in organizations is emphasized.
PREREQUISITE: MGT 600 OR MGT 651 OR EQUIVALENT.

MGT661 Influence, Power and Politics in Organizations
3 credits  Offered By Announcement Only
One of the basic realities of organizational life is that people continually attempt to control the actions of others and to successfully influence their behavior. This reality leads to a wide array of organizational politics aimed at enhancing one's own or one's group's personal agendas. This course focuses on preparing graduate business students for the challenges and "realities" they will ultimately face as managers. Given that most business students will eventually be leading the efforts of others, it is essential that they understand how to acquire power and exercise power within ethical bounds.
PREREQUISITE: MGT 651 OR EQUIVALENT.

MGT662 Managerial Judgment and Decision Making
3 credits  Offered By Announcement Only
Decision-making methods are explored with an emphasis on the natural way managers make predictive judgments and exercise choice. The goal is to help students learn to make better decisions.

MGT675 Business Policy and Strategy
2 credits  Fall & Spring Semester
The objectives of the course are to improve the student's ability to think strategically and to provide an intellectual framework that enhances understanding of the MBA program. The course focuses on relationships among the firm, its strategy, and its environment; why firms choose certain businesses; which business strategies are successful; and how firms can change in response to a dynamic environment. Models for strategic formulation, implementation, and control are developed that facilitate an integrated understanding of the courses that comprise the MBA curriculum. Readings and lectures illustrate strategic management theories and frameworks while case discussions, experiential exercises, and team projects provide opportunities for application.
PREREQUISITE: FULL-TIME MBA STATUS.
MGT677 Corporate Strategy and Organization
2 credits  Fall & Spring Semester
This capstone course focuses on the perspective and skills of the general manager. Its purpose is to provide practice in diagnosing and identifying realistic solutions to complex strategic and organizational problems. Course builds on previous coursework by providing an opportunity to integrate various functional areas by providing a total business perspective. Since the course focus is on pragmatic, action-oriented general management skills, the course is taught primarily through the case method and requires both written analyses and case presentations.
PREREQUISITE: FULL-TIME MBA STATUS.

MGT679 Merger and Acquisition Strategies
0-2 credits  Fall Semester & Second Summer Session
This course examines the merger and acquisition growth of two sets of actors. First, it focuses on "financial buyers" (hedge funds, leveraged buy-out groups, private equity funds) that acquire with the intention of divesting the asset at a profit in the near or medium term. Second, it focuses on "strategic buyers" (corporations or companies) that acquire with the intention of operating the acquired asset as a stand-alone business or by integrating it into an on-going operation or set of businesses. The course utilizes lectures, case discussions, presentations, and guest speakers to examine issues of strategy formulation and subsequent execution.

MGT680 DOING BUSINESS IN CHINA
2 credits  Fall & Spring Semester
This course explores various business and management issues faced by international executives who are interested or active in various industries and markets in China, aiming to improve their understanding of this largest emerging market in the world. Several case studies of business organizations and industries are used throughout the course. Emphasis of the course material and class discussion is on critical thinking, solutions to problems, and evaluation different options.

MGT681 Essentials of Health Care Management and Policy
3 credits  Offered By Announcement Only
This course develops an understanding of the basic elements of the health Services industry in the United States. A systems approach will be used utilizing a historical perspective as a basis and moving on to current and potential future system dynamics. The various components of the health care system will be examined, including physician services, hospital and hospital systems, long-term care providers, mental health services, and pharmaceutical services. Various elements associated with the financing of health services will be examined as well as indemnity insurance, capitation, and the role of managed care and consumer driven health care in theory and practice. The role of government and its impact on our health care system will be explored as well.

MGT682 Issues in Health Care Administration
3 credits  Offered By Announcement Only
A seminar on current problems and issues in health care administration.

MGT684 Analysis of Health Care Delivery and Policy
3 credits  First Summer Session
This course examines theoretical and operational incentive structures which guide health care consumers, providers and health care organization toward decisions both efficient and inefficient.
MGT685 Economic Models in Operations and Supply Chain Management  
3 credits  
Fall & Spring Semester  
In this course we will study the academic literature that is based on analytical models of supply chain and channel management. In particular, we will be concerned with models that capture the economics that govern the interaction among the firms in a supply chain/distribution channel. Since this topic is of interest to both the marketing and operations management communities, we will draw upon readings from both areas. One of our objectives will be to identify opportunities for building bridges between these two bodies of knowledge.  
PREREQUISITE: PH.D. STUDENTS. BACKGROUND IN GAME THEORY AND STOCHASTIC PROCESSES IS REQUIRED.

MGT687 Health Care Organization, Economics, and Ethics  
3 credits  
Offered By Announcement Only  
Course provides the student insight into organizational and behavioral aspects of the various sectors and agents within the health care industry and understanding of how such aspects in turn affect performance measured in terms of both economic and ethical criteria.  
PREREQUISITE: FOR MBA HEALTH ADMINISTRATION STUDENTS.

MGT688 Individual and Interpersonal Processes  
3 credits  
Offered By Announcement Only  
Basic Overview of many topics relevant to studying individuals and dyads in organizations. Course will introduce students to a variety of topics related to individual and interpersonal differences, processes, and behaviors in organizations. Students will begin to see how to link research designs with a theoretical framework for empirical testing.  
PREREQUISITE: DOCTORAL STUDENTS ONLY

MGT689 Doctoral Seminar in Leadership and Group Processes  
3 credits  
Offered By Announcement Only  
This seminar examines the theory and research that focuses on individual leadership and examines implications for individual and group behaviors as well as bridging the micro-macro divide. You will perform a critical in-depth examination of the primary research literature, focusing on appropriateness of design, analysis, interpretation, contribution and future research directions.  
PREREQUISITE: DOCTORAL STUDENTS ONLY

MGT691 International Management  
2 credits  
Fall & Spring Semester  
Course is designed to provide an overview of management problems and issues for organizations and executives operating internationally. Students learn how multinational enterprises are different, why they behave as they do, and how to apply management principles to problem-solving in such contexts.
MGT692 Theories in Management and Organization
3 credits  Fall Semester
This course provides an in-depth review of major theories in the broad field of management and organization. It covers a multitude of management and organization theories that are derived not only from general management but from economics, sociology, ecology, and the like. The course will use several techniques, including lectures, article presentations and discussions, theory development, research project, and manuscript preparation. By the end of the term, students are expected to understand the central notions of each theory being discussed, comment on various arguments in these theories, improve the skills in applying these theories to their specific research questions, and sharpen their ability to develop theoretical models.
PREREQUISITE: CO-REQUISITE/ BUSINESS PH.D. STUDENTS

MGT693 Theories and Research in Global Strategic Management.
3 credits  Fall & Spring Semester
This course is designed to provide doctoral students an in-depth review of major theories, paradigms, and perspectives in global strategy and international business. We'll also explore how to apply existing theories and perspectives to new contextual settings, such as emerging markets and outsourcing. Furthermore, we'll do all this while reading and critiquing the major branches and works within the strategic management and international business literature. The course is intended for doctoral students in business or related fields. There are no formal prerequisites for the course although some basic knowledge of global business is expected.
PREREQUISITE: CO-REQUISITES/ BUSINESS PH.D. STUDENTS

MGT694 Ph.D Seminar in Strategic Management
3 credits  Spring Semester
This course is designed to provide doctoral students an in-depth review of major theories, perspectives, and methods in strategic management. The course is intended for doctoral students in business or related fields.
PREREQUISITE: DOCTORAL STUDENTS ONLY

MGT695 Ph.D Seminar in Emerging Market Research
3 credits  Fall Semester
This course is designed to provide doctoral students an in-depth review and study of major theories, perspectives, methods, findings, and future research issues in business and management involving emerging economies. It encompasses both macro- (e.g., strategic management, international business, entrepreneurship), and micro- (e.g., culture, human resources management, leadership, and organizational behavior) levels.
PREREQUISITE: DOCTORAL STUDENTS ONLY

MGT698 Selected Topics
1- 6 credits  Offered By Announcement Only
Topics in selected areas of specialization.

MGT699 Directed Study
1- 6 credits  Fall & Spring Semester & First & Second Summer Session
Individually supervised research project in selected field of management. Approval of supervising professor of the topic/scope of work/evaluation is required prior to registration.
PREREQUISITE: SPECIALIZATION IN MGT DEPARTMENT.
MGT725 Comprehensive Test Preparation
0-3 credits  Fall & Spring Semester & First Summer Session
PREREQUISITE: DOCTORAL STUDENTS ONLY; ALL CORE COURSEWORK COMPLETED

MGT730 Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Course is required of all candidates for the Ph.D. The student enrolls for credit as determined by his/her advisor.

MGT750 Research in Residence
0-12 credits  Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D. after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. May be regarded as full-time residence as determined by the Dean of the Graduate School.

MARKETING

MKT555 Marketing Honors Research Project
3 credits  Offered By Announcement Only
Research project to fulfill requirements for Departmental Honors in Marketing.
PREREQUISITE: 3.9 GPA. SENIOR STANDING. PERMISSION OF INSTRUCTOR OR DEPARTMENT.

MKT640 Foundations of Marketing Management
2 credits  Fall & Spring Semester
Course introduces students to the analytical concepts and tools of marketing management. Special emphasis is placed on the relationships between marketing and overall company strategy, the development of a customer orientation, the integration of marketing throughout the organization, and the implementation of systems for planning and controlling the marketing effort. Students consider problems of consumer analysis, product planning, integrated communication, distribution, and pricing. The discovery and application of marketing management skills are developed through the use of readings, case exercises, and class discussions.

MKT641 Marketing Research
2 credits  Fall & Spring Semester
The objective of the course is to allow students to understand functional analysis of consumer and market behaviors utilizing statistical tools. The course will cover topics of secondary sources of data, sampling, questionnaire design, and analysis and interpretation of data. Project and case analysis methods will be used for instruction.

MKT643 Consumer Insights
2 credits  Spring Semester
This course focuses on understanding consumers through several tools available. The aim is to enable you to develop the ability to be a good listener to your customers and potential customers. This course is aimed at the manager who is the ultimate user of marketing research conducted by the company and who is responsible for determining the scope and direction of research conducted on his/her behalf.
MKT644 Services Marketing
2 credits
Fall & Spring Semester
Course develops skills necessary to manage companies in an increasingly service-oriented and technology-driven economy and to gain sustainable competitive advantage through delivering superior quality services. Course covers the special marketing challenges posed by the unique characteristics of services and discusses their managerial implications. The need and strategies for synergistic management of operations, systems, and people to satisfy customers in order to achieve marketing excellence and superior financial performance is also included.

MKT645 International Marketing
2 credits
Fall & Spring Semester
Course analyzes the theories and practice of international marketing management. Course allows students to understand markets and aid in the development of marketing plans based on the nature of national as well as international markets. Issues of globalization, standardization, intermarket segments, trading blocks, global marketing strategies, local branding, global branding in the context of customer movements, product development, pricing, distribution, communication, and segmentation in global markets are also discussed.

MKT646 Consumer Behavior
2 credits
Fall & Spring Semester
Overview of psychological and normative principles of consumer decision-making and judgment through focusing on underlying behavioral research and theory. How people process information, make decisions involving risk and uncertainty, conflicting objectives, and imperfect information is discussed. The implications of consumer behavior on marketing strategy are highlighted.

MKT647 Advertising and Communications Management
2 credits
Fall & Spring Semester
Billions of dollars are wasted every year on ineffective advertising and communication campaigns. This problem is due to an absence of a compelling strategy to serve as a foundation for developing creative executions and media plans. The course provides a balanced analysis of strategy and execution of integrated marketing communication campaigns. The effectiveness of existing and emerging communication vehicles to attain strategic marketing goals are assessed. Special emphasis is placed on advertising, sales promotions, and online communications. Current and historical campaigns are also reviewed. Course requirements include case reports, projects, and class participation.

MKT648 New Product Development
2 credits
Fall Semester
This course enables students to appreciate the systematic approach that goes into the creation and marketing of new products. Practical aspects of developing and marketing new products are included through two assignments and one class project.
MKT649 Strategic Brand Marketing
2 credits Spring Semester
More and more firms have come to realize that their brands are among their most valuable assets. The goal of this course is to teach students the strategic significance of brands in creating shareholder value. Students should develop fluency with the core principles associated with branding including: an understanding of how to develop a brand positioning; managing total brand experience; how to manage the brand relevancy over time; familiarity with the various qualitative and quantitative methodologies that are used to evaluate brand equity; how to achieve growth through brand extension; brand design and brand messaging. The basic philosophy for this course is to blend theory and practice of brand management. Branding is both an art and a science. Few branding situations have a definitive, unqualified “right” answer as to what is the best approach. However, when armed with relevant and comprehensive theories, appropriate frameworks and models, and familiarity with past successful and unsuccessful branding strategies, managers can make better and more informed decisions that are more likely to yield successful implementation.

MKT650 Strategic Marketing
2 credits Fall & Spring Semester
Course develops the skills necessary to strategically manage business-unit level marketing activities in a multi-brand firm. This necessitates examining all marketing mix elements, R&D, financial and production considerations simultaneously in the context of the many markets, products, and services that may concern a typical firm. The emphasis is placed on understanding internal capabilities, market competitors, and customers. Market simulation exercise, cases, and readings are utilized.
PREREQUISITE: MKT 640.

MKT660 Foundations of Marketing Management
3 credits Fall & Spring Semester
Marketing problems experienced by top executives are examined and fundamental problem-solving concepts are developed. Students consider problems of consumer needs, product planning, promotion, distribution and pricing. The discovery and application of marketing management skills are developed through the use of cases and a major planning project.

MKT665 International Marketing
3 credits Fall & Spring Semester
Analysis of major U.S. foreign markets, marketing policies, and techniques are discussed.
PREREQUISITE: MKT 660.

MKT672 Services Marketing
3 credits Fall & Spring Semester
Course develops the skills necessary to manage services marketing and compete through delivering quality service. The unique characteristics of services and their managerial implications are examined. Importance of the synergistic management of operations, environment, systems and people to satisfy the customer is highlighted.
PREREQUISITE: MKT 660.
MKT686 Behavioral Decision Theory in Consumer Research.

3 credits  
Spring Semester  
The objective of this seminar is to acquaint students with important theories and findings regarding consumer behavior and to stimulate research. Students will learn how to identify important research problems, ask interesting research questions, develop theories and hypotheses, and design experiments.
PREREQUISITE: NONE

MKT687 Marketing Strategy

3 credits  
Fall Semester  
Marketing Strategy is a vast, exciting and exploding literature that almost defies classification. However despite this difficulty one common theme unifies and distinguishes this stream of research: it is marketing as seen through the eyes of a manager. Is it worth fighting for market share? How do we analyze competitors? Is it more profitable to introduce a new product or enter a new market? Should we build on existing relationships or seek new customers? Does loyalty management pay? Do consumers understand product quality? Can we quantify the effects of advertising and promotions? What metrics should we use to evaluate the effectiveness of marketing effort? Can we run policy simulations before committing to marketing action? These are some of the questions that marketing managers need to address. Often the questions are very broad and complex reflecting the bewildering range of techniques that have been used to address those questions. The seminar will try to impart an appreciation of how to define and solve research problems in marketing strategy.

MKT688 Ph.D. Seminar in Consumer Behavior and Decision Making

3 credits  
Fall Semester  
This course is designed to provide students with a background regarding a wide set of topics in consumer behavior focusing on theoretical models. In addition to developing a knowledge base in several extant consumer behavior literatures, this course has several additional goals. Students will 1) become familiar with the content and style of consumer behavior research published within the marketing field, 2) develop an understanding of many methodologies and paradigms that can be used to investigate theoretical issues, 3) have several opportunities to explicate research ideas that they will hopefully be able to pursue in the remainder of the program or early in their career, and 4) learn to critically evaluate the research of others to aide in strengthening their thinking and ultimately their own research activities.

MKT695 Topics in Marketing

1-3 credits  Offered By Announcement Only  
Topics in selected areas of Marketing.

MKT696 Topics in Marketing

1-3 credits  Offered By Announcement Only  
Topics in selected areas of Marketing.

MKT697 Topics in Marketing

1-3 credits  Offered By Announcement Only  
Topics in selected areas of Marketing.

MKT698 Topics in Marketing

1-3 credits  Offered By Announcement Only  
Topics in selected areas of Marketing.
MKT699 Directed Study
1-6 credits Offered By Announcement Only

MKT730 Doctoral Dissertation
1-12 credits Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. The student will enroll for credit as
determined by his/her advisor but not for less than a total of 24. Not more than
12 hours of MKT 730 may be taken in a regular semester, nor more than six in a
summer session. Where a student has passed his/her (a) qualifying examinations,
and (b) is engaged in an assistantship, he/she may still take the maximum allowable
credit stated above.

MKT750 Research in Residence
0 credit Offered By Announcement Only
Used to establish research in residence for the Ph.D. after the student has been
enrolled for the permissible cumulative total in appropriate doctoral research.
Credit not granted. May be regarded as full-time residence as determined by the
Dean of the Graduate School.
COM598 Special Topics in Communication
3 credits Offered By Announcement Only
This course subject matter varies according to announced special topic. See class schedule for details.
PREREQUISITE: 12 CREDITS IN COMMUNICATION AT 300 LEVEL OR ABOVE OR EQUIVALENT, PERMISSION OF INSTRUCTOR

COM601 Theories of Communication
3 credits Fall Semester
Comparison of theories dealing with the processes and effects of communication is discussed.
PREREQUISITE: PROGRAM DIRECTORS MAY REQUIRE STUDENTS TO ENROLL IN A SPECIFIC SECTION OF COM 601 DEPENDING ON THEIR PROGRAM OF STUDY.

COM602 Methods of Communication Research
3 credits Fall Semester
A comprehensive survey of communication research methods. Qualitative and quantitative approaches will be explained and practiced.
PREREQUISITE: PROGRAM DIRECTORS MAY REQUIRE STUDENTS TO ENROLL IN A SPECIFIC SECTION OF COM 602 DEPENDING ON THEIR PROGRAM OF STUDY.

COM603 Qualitative Research Methodologies
3 credits Spring Semester
Research methods and theories for participant-observation, phenomenology, symbolic interactionism, ethnomethodology, content analysis, and historical-critical interpretation.
PREREQUISITE: PROGRAM DIRECTORS MAY REQUIRE STUDENTS TO ENROLL IN A SPECIFIC SECTION OF COM603 DEPENDING ON THEIR PROGRAM OF STUDY.

COM604 Advanced Communication Research Methods and Statistics
3 credits Offered By Announcement Only
Provides an advanced examination of the problems and methods found in quantitative communication research.
PREREQUISITE: COM 601 and 602.

COM605 Theories and Methods for Mass Communication Research
3 credits Spring Semester
PREREQUISITE: GRADUATE STANDING

COM609 Special Topics in Communication
3 credits Offered By Announcement Only
This course subject matter varies according to announced special topic. See class schedule for details.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

COM610 Doctoral Colloquium
0 credit Fall Semester
This course will introduce students to the nature and scope of doctoral study.

COM613 History of Communication
3 credits Fall & Spring Semester
Course will cover the historical analysis of the entire field of communication (interpersonal, intercultural, mass, etc.) from the pre-Aristotle period to the present.

COM615 Social Effects of Mass Communication
3 credits Fall Semester
Roles, functions, and consequences of mass communication in American society.
PREREQUISITE: COM 601.
COM672 Seminar in Persuasive Communication
3 credits Offered By Announcement Only
This course is designed to provide students with a basic understanding of the role of communication in the persuasion process. This will be achieved by exploring historical and contemporary theories of persuasion as well as examining research that has focused on persuasion.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

COM695 Directed Readings
1- 3 credits Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: PERMISSION OF INSTRUCTOR.

COM698 Seminar in Communication
3 credits Fall & Spring Semester
An in-depth, hands-on course in which students conduct a research project using the specified research method. May include experimental design, advanced qualitative methods, content analysis, or survey methods. Repeatable up to 6 credits.
PREREQUISITE: COM 602, 603.

COM710 Master's Thesis
1- 6 credits Fall & Spring Semester & First & Second Summer Session
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

COM720 Research in Residence
0 credit Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in COM 710 (usually six credits). Credit not granted. May be regarded as full time residence.

COM725 Continuous Registration--Master's Study
0 credit Fall & Spring Semester & First & Second Summer Session
To establish residence for non-thesis master's students who are preparing for major examinations. Credit not granted. Regarded as full time residence.

COM730 Doctoral Dissertation
1-12 credits Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor, but for not less than a total of 12 hours.

COM750 Research in Residence
0 credit Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

COMMUNICATION STUDIES
COS545 Intercultural Communication: International Perspectives
3 credits Offered By Announcement Only
Effects of cultural attitudes, beliefs, and attributions on meaning assignment. Effects of language on the structure of thought. Ethics and process of the diffusion of cultural innovations are analyzed.
PREREQUISITE: PERMISSION OF INSTRUCTOR
COS546 Intercultural Communication: Domestic Perspectives
3 credits Offered By Announcement Only
Effects of cultural attitudes, beliefs, and attributions on meaning assignment. Diffusion of cultural innovations, prejudice, discrimination, and equality are discussed. Emphasis is placed on intercultural interactions within the United States.
PREREQUISITE: PERMISSION OF INSTRUCTOR

COS560 The Executive Communicator
3 credits Offered By Announcement Only
Audience analysis, speech writing, delivery in professional presentations, theory, and history of great speeches are covered. Detailed critiques of student speaking styles and performances are also included.
PREREQUISITE: JUNIOR STANDING OR PERMISSION OF INSTRUCTOR

COS591 Advanced Special Topics in Communication Studies
3 credits Offered By Announcement Only
This course subject matter varies according to announced special topic. See class schedule for details.
PREREQUISITE: PERMISSION OF INSTRUCTOR

COS599 Advanced Projects and Directed Research
1-6 credits Fall & Spring Semester & First & Second Summer Session
Individual study. Course may be repeated to a maximum of six credits.
PREREQUISITE: PERMISSION OF INSTRUCTOR

COS674 Seminar in Interpersonal Communication
3 credits Offered By Announcement Only
This course focuses on theoretical approaches to interpersonal communication. Emphasis is placed on current research including fundamentals of relationships, developmental issues, interaction management, and interpersonal competence.
PREREQUISITE: PERMISSION OF INSTRUCTOR

COS682 Seminar in Organizational Communication
3 credits Offered By Announcement Only
This course explores theoretical perspectives and the impact of communication in organizations. Critical analysis includes management styles, decision-making, group interaction, conflict resolution, and diffusion of innovations.
PREREQUISITE: PERMISSION OF INSTRUCTOR

COS684 Organizational Communication Audit Procedures
3 credits Offered By Announcement Only
Measurement of communication variables in the organization focusing on analyses using message diffusion, cross-section survey, communication network, and communication audit procedures.
PREREQUISITE: PERMISSION OF INSTRUCTOR

COS690 Communication Studies Practicum
1-3 credits Fall & Spring Semester
Prescribed graduate study and supervised work with practitioners in organizations.
PREREQUISITE: COM 601, COM 602, COM 603, AND 9 HOURS IN COMMUNICATION STUDIES PROGRAM; PERMISSION OF PROGRAM DIRECTOR

ELECTRONIC MEDIA

CEM517 Television News Reporting
3 credits Fall & Spring Semester
PREREQUISITE: CEM 245 AND CEM 317 FOR UNDERGRADUATE STUDENTS. PERMISSION OF INSTRUCTOR FOR GRADUATE STUDENTS.
CEM527 Television Newscast
3 credits                                                    Fall & Spring Semester
PREREQUISITE: CEM 417 OR CEM 517

CEM531 Audio Production Techniques
3 credits                                              Offered By Announcement Only
Writing, preparation, and production of material for auditory presentation, live or recorded, broadcast on open or closed circuit radio systems. Familiarization with magnetic and optical recording procedures, both double and single system sound, in television and motion picture production is discussed. Lecture and laboratory are included.
PREREQUISITE: PERMISSION OF INSTRUCTOR

CEM534 Practicum in Communication
3 credits                                              Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR

CEM535 Telecommunication Systems
3 credits                                              Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR

CEM592 Special Topics in Electronic Media
3 credits                                              Offered By Announcement Only
This course subject matter varies according to announced special topic. See class schedule for details.
PREREQUISITE: PERMISSION OF INSTRUCTOR AND PROGRAM DIRECTOR

CEM599 Advanced Projects and Directed Research
1-6 credits  Fall & Spring Semester & First & Second Summer Session
Individual study. Course may be repeated for a maximum of six credits.
PREREQUISITE: PERMISSION OF SUPERVISING INSTRUCTOR

CEM605 News Technologies.
3 credits                                                             Fall Semester
This course emphasizes how television, digital, and multimedia technologies contribute to the storytelling process. Understanding of production theories and news processes will be gained through hands on work with television and multimedia projects.
PREREQUISITE: NONE

CEM606 Writing and Reporting Across Platforms
3 credits                                                             Fall Semester
An introduction to professional operating practices in multimedia journalism with emphasis on news writing and news production skills.
PREREQUISITE: PERMISSION OF INSTRUCTOR

CEM607 Broadcast Journalism
3 credits                                                           Spring Semester
Advanced instruction in techniques of news writing and field reporting, including conducting research for stories, preparing complete field packages for newscasts, filing live remotes, and conducting interviews.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CEM608 Long-Form Public Affairs Programming
3 credits                                                      First Summer Session
Development and production of longer form news, information magazine, and documentary style programming.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
CEM609 Internship in Electronic Media journalism
1-3 credits  Fall & Spring Semester & First & Second Summer Session
The internship program is a supervised activity in which graduate students advance their skills and acquire professional experience by working with a sponsoring organization. Students learn through observation, discussions with supervising personnel, & performance of professional activities.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CEM630 Topics in Electronic Communication
3 credits  Offered By Announcement Only
This course subject matter varies according to announced special topic. See class schedule for details.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CEM635 The Broadcasting, Cable, and Electronic Media Industry
3 credits  Spring Semester
Examination of broadcasting, cable, and related electronic media from a business perspective.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CEM641 Information Processing for Video-Audio Systems
3 credits  Offered By Announcement Only
Use of non-print media, by corporate, social, political, and educational institutions to convey information to internal and external audiences.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CEM643 Managing Video-Audio Information Systems
3 credits  Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CEM653 Producing Television News
1-3 credits  Fall & Spring Semester & First Summer Session
The mechanics of planning and executing professional style newscast and/or long-form television news program.
PREREQUISITE: CONCURRENT ENROLLMENT IN CEM 606, 607 OR 608.

CEM725 Journalism Internship
3 credits  Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: PERMISSION OF PROGRAM DIRECTOR

JOURNALISM

CNJ510 Comparative Media Systems
3 credits  Offered By Announcement Only
This course deals with issues in international news gathering and distribution, giving special attention to Latin America and the Caribbean. The class takes a comparative approach, looking at media systems in the United States and other nations.
PREREQUISITE: PERMISSION OF INSTRUCTOR

CNJ511 Global Media
3 credits  Offered By Announcement Only
An analysis of issues and practices surrounding globalization, regionalization, and global/local as they relate to media industries, journalism, and communication.
PREREQUISITE: PERMISSION OF INSTRUCTOR

CNJ513 Computer-Assisted Reporting
3 credits  Offered By Announcement Only
Use of computer applications for newsgathering with emphasis on the World Wide Web, commercial online services, and database tools.
PREREQUISITE: CNJ 216 OR PERMISSION OF INSTRUCTOR
CNJ515 Reporting and the Internet
3 credits          Offered By Announcement Only
Overview of uses of online computer services for newsgathering and distribution
with emphasis on the Internet.
PREREQUISITE: CNJ 216 OR PERMISSION OF INSTRUCTOR

CNJ517 International Journalism
3 credits          Offered By Announcement Only
PREREQUISITE: COM 601

CNJ522 Principles of Interactive Design
3 credits          Fall Semester
This is an advanced multimedia design course that focuses on techniques and methods
to create the best user experience in multimedia journalism projects.
PREREQUISITE: PERMISSION OF INSTRUCTOR

CNJ523 Sports Reporting
3 credits          Offered By Announcement Only
An analysis of sports journalism that will develop students' skills in sports reporting
and sports writing. Discussions range across the entire field of sports reporting,
including broadcasting, but the greatest emphasis is concentrated on sports reporting
and writing for newspapers and magazines.
PREREQUISITE: CNJ 216 OR PERMISSION OF INSTRUCTOR

CNJ544 Feature Writing
3 credits          Offered By Announcement Only
Analyzing and writing feature articles for magazines, newspapers, and other news media.
PREREQUISITE: PERMISSION OF INSTRUCTOR

CNJ595 Special Topics in Journalism
3 credits          Offered By Announcement Only
This course subject matter varies according to announced special topic. See class
schedule for details.
PREREQUISITE: PERMISSION OF INSTRUCTOR

CNJ599 Advanced Projects and Directed Research
1-6 credits       Fall & Spring Semester & First & Second Summer Session
Individual study. Course may be repeated to a maximum of six credits.
PREREQUISITE: PERMISSION OF SUPERVISING INSTRUCTOR

CNJ609 Graduate Internship in Print Journalism
1-3 credits       Fall & Spring Semester & First & Second Summer Session
Prescribed study and supervised work with professionals in newspapers, magazines,
web sites or related news media.
PREREQUISITE: GRADUATE STANDING, CNJ 611, 614 AND 619, OR SIGNIFICANT JOURNALISM
EXPERIENCE, CUMULATIVE GPA OF 3.0 IN ALL GRADUATE COURSES TAKEN, AND/OR
PERMISSION OF THE PROGRAM DIRECTOR.

CNJ611 Newswriting and Reporting Seminar
3 credits          Fall Semester
Development of newswriting and reporting skills for news media.

CNJ612 History of Journalism Seminar
3 credits          Offered By Announcement Only
The development and impact of journalism in America traced through industry leaders and events.
CNJ614 Media Law and Ethics Seminar
3 credits
Offered By Announcement Only
A survey of legal and ethical issues concerning First Amendment theories and practices regarding defamation, privacy, freedom of information, free press vs. fair trial, reporter privilege, access to media, intellectual property, obscenity, broadcasting, and new media.

CNJ617 International Journalism
3 credits
Offered By Announcement Only
News gathering, transmission, and distribution outside the United States, with emphasis on Latin America.
PREREQUISITE: COM 601.

CNJ619 Advanced Newsgathering and Writing Seminar
3 credits
Spring Semester
Refining news writing and reporting skills for the media.
PREREQUISITE: CNJ 611.

CNJ620 Online Journalism (in Spanish)
3 credits
Spring Semester
This course should help journalism students develop the necessary skills to work online, including posting breaking news, writing for the Web, gathering and uploading multimedia content and creating/writing blogs. This course is taught in Spanish.
PREREQUISITE: THIS COURSE IS TAUGHT IN SPANISH.

CNJ622 Seminar in News Ethics and Problems
3 credits
Offered By Announcement Only
Critical analysis of ethical issues and problems facing practicing journalists. Discussion of differences in philosophical ethics and practical ethics in journalism.
PREREQUISITE: CNJ 611.

CNJ624 Seminar in Editing and Design for Print and Websites
3 credits
Offered By Announcement Only
Theory and practice in news media copy editing, layout, and design.
PREREQUISITE: CNJ 611.

CNJ626 Specialized Writing and Reporting Seminar
3 credits
Offered By Announcement Only
Techniques in writing and reporting about specialized and complex subjects for news media.
PREREQUISITE: CNJ 611.

CNJ654 Writing for Publication
1-3 credits
Fall & Spring Semester & First Summer Session
This course focuses on writing principles and practices of the news media. It is designed to give the student exposure and practical experience in writing for the print media.
PREREQUISITE: CONCURRENT ENROLLMENT IN CNJ 611, 619 OR COMPLETION OF BOTH.

CNJ655 Media Management and Entrepreneurship (in Spanish)
3 credits
Spring Semester
This course is designed to give students an understanding of the major trends in the news media business and to give them the tools to initiate and manage media projects. This course is taught in Spanish.
PREREQUISITE: THIS COURSE IS TAUGHT IN SPANISH.
CMP501 Principles of Aesthetics and Analysis
3 credits                                              Fall Semester
PREREQUISITE: LIMITED TO MFA CANDIDATES

CMP503 Film Directors
3 credits                                              Fall Semester
This course will address the conditions of authorship in film through an intensive
study of the films of two or more directors, whose careers will serve as case studies.
These directors will be historically important and their work will represent significant
achievements in the art of film.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

CMP504 Aspects of Contemporary Cinema
3 credits                                              Offered By Announcement Only
The study of the ways in which film communicates. Intensive analysis and criticism
of cinematic techniques exemplified through particular films.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

CMP506 Genres
3 credits                                              Offered By Announcement Only
A study of selected movie genres from a variety of critical perspectives. Issues
pertaining to selfhood, sexual difference, and other concerns of present-day film
criticism will be examined.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

CMP507 National Cinemas
3 credits                                              Spring Semester
Selected films from Europe, Asia, Africa and Latin America will be studied in relation
to their diverse social/political and cultural contexts.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

CMP509 Legal Aspects of Motion Pictures
3 credits                                              Spring Semester
The law, contracts, and negotiating techniques of the business affairs aspects
of the production of motion pictures.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF THE DIRECTOR OF THE MOTION PICTURE PROGRAM

CMP510 Foundation of Screenwriting
3 credits                                              Fall Semester
PREREQUISITE: LIMITED TO MFA CANDIDATES

CMP511 Writing the Short Film
3 credits                                              Offered By Announcement Only
PREREQUISITE: CMP 510, LIMITED TO MFA CANDIDATES

CMP520 Cinematography
3 credits                                              Fall Semester
PREREQUISITE: LIMITED TO MFA CANDIDATES

CMP529 Nonfiction Film
3 credits                                              Offered By Announcement Only
An examination of American and world nonfiction films.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR.

CMP530 Introduction to Editing
3 credits                                              Spring Semester
PREREQUISITE: LIMITED TO MFA CANDIDATES
SCHOOL OF COMMUNICATION

MOTION PICTURES

CMP550 Production Workshop I - Narrative
3 credits  
Spring Semester
Methods, techniques and aesthetics of 2D computer animation and compositing including animated text, title design and green screen.
PREREQUISITE: LIMITED TO MFA CANDIDATES

CMP551 Advanced Motion Graphics and Compositing
3 credits  
Spring Semester
Extend the 2D skills of students who have taken CMP 550 to 3D motion graphics and animation. Emphasis on title design and animation.
PREREQUISITE: CMP 550 OR PERMISSION OF INSTRUCTOR.

CMP552 Motion Picture Marketing and Distribution
3 credits  
Fall Semester
Economic and marketing considerations in the production and distribution of motion pictures.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF THE DIRECTOR OF THE MOTION PICTURE PROGRAM

CMP553 Advanced Motion Picture Marketing
3 credits  
Offered By Announcement Only
Advanced marketing considerations in the distribution of motion pictures.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR

CMP558 Documentary Production
3 credits  
Offered By Announcement Only
An introduction to the documentary genre including the production of a documentary from start to finish.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR

CMP560 Directing the Actor
3 credits  
Fall Semester
PREREQUISITE: LIMITED TO MFA CANDIDATES

CMP566 Character and Dialogue
3 credits  
Offered By Announcement Only
An examination of the craft and techniques of creating original characters and dialogue.
PREREQUISITE: MFA SCREENWRITING STATUS OR PERMISSION OF INSTRUCTOR

CMP570 Producing the Motion Picture
3 credits  
Spring Semester
PREREQUISITE: LIMITED TO MFA CANDIDATES

CMP586 Online Screenwriting
3 credits  
Fall & Spring Semester & First & Second Summer Session
The student will prepare and complete the first act of a feature-length screenplay or the student will prepare and commence the rewrite of an existing screenplay.
PREREQUISITE: PERMISSION OF INSTRUCTOR

CMP594 Special Topics in Motion Picture
3 credits  
Offered By Announcement Only
This course subject matter varies according to announced special topic. See class schedule for details.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
CMP595 Directing Techniques
3 credits  
Fall & Spring Semester
To build a more advanced set of professional skills and practices through scene work, shooting, and collaboration.
PREREQUISITE: CMP 251 OR PERMISSION OF INSTRUCTOR

CMP605 Production Management
3 credits  
Spring Semester
A comprehensive examination of the skills and techniques employed by line producers and production managers in the preproduction, production, and post-production of motion pictures.

CMP610 Writing the Feature-Length Screenplay
3 credits  
Fall Semester
PREREQUISITE: CMP 510

CMP611 Rewriting the Feature Screenplay
3 credits  
Spring Semester
PREREQUISITE: CMP 610

CMP612 Writing for Episodic Television
3 credits  
Spring Semester
PREREQUISITE: CMP 611

CMP627 Scriptwriting
3 credits  
Fall & Spring Semester
Study of and practice in writing feature-length, narrative motion picture scripts. Focus is placed on cinematic structure and presentation of character.
PREREQUISITE: LIMITED TO MFA SCREENWRITING CANDIDATES.

CMP630 Advanced Editing
3 credits  
Spring Semester
PREREQUISITE: CMP 530

CMP638 Writing the Short Film
3 credits  
Spring Semester
A course in the fundamentals of screenwriting focused on the creation of a 15-30 page screenplay suitable for an MFA project film.
PREREQUISITE: LIMITED TO MFA PRODUCTION CANDIDATES.

CMP640 Sound Design
3 credits  
Spring Semester
An historical examination of the theatrical exhibition of motion pictures. Focus is placed on contemporary business practices within the exhibition industry, with particular attention to a definition of good programming practices.
PREREQUISITE: LIMITED TO MFA CANDIDATES

CMP650 Production Workshop II - Individual Projects
3 credits  
Fall Semester
A concentration on four distinctive film directors and their work. Utilization of techniques from film theory, film criticism, and film history to arrive at a definition of their unique cinematic styles.
PREREQUISITE: CMP 550
CMP652 Advanced Cinematography
3 credits
Spring Semester
Advanced technical and photographic principles begun in CMP 651. Preparation for the filming of the MFA project film.
PREREQUISITE: CMP 651.

CMP653 Documentary Production
3 credits
Spring Semester
PREREQUISITE: LIMITED TO MFA CANDIDATES

CMP656 Motion Picture Post-Production Procedures
3 credits
Fall Semester
An examination of the esthetics of editing, recording, re-recording, and laboratory procedures following completion of principal photography.
PREREQUISITE: LIMITED TO MFA PRODUCTION CANDIDATES.

CMP660 Directing Performance and Creative Collaboration
3 credits
Fall Semester
PREREQUISITE: LIMITED TO MFA CANDIDATES

CMP661 Directing the Camera
3 credits
Fall & Spring Semester
Directorial techniques and methods in the narrative film: conceptualizing scripted material, staging, and directing the performer.
PREREQUISITE: CMP 660

CMP670 The Business of Motion Pictures
3 credits
Fall Semester
PREREQUISITE: CMP 570

CMP671 Production Management
3 credits
Fall Semester

CMP672 Marketing and Distribution
3 credits
Spring Semester

CMP694 Motion Picture Internship
1-3 credits
Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: MINIMUM 24 CREDITS IN THE MFA

CMP695 Special Topics in Motion Pictures
3 credits
Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR

CMP699 Advanced Projects and Directed Research
1-6 credits
Offered By Announcement Only
PREREQUISITE: PERMISSION OF SUPERVISING INSTRUCTOR

CMP715 MFA Thesis
1-6 credits
Fall & Spring Semester & First & Second Summer Session
University of Miami Bulletin, 2012-2013
Graduate Course Listing
SCHOOL OF COMMUNICATION
MOTION PICTURES

CMP734 MFA Thesis
1- 6 credits Fall & Spring Semester & First & Second Summer Session
Film production in which the student functions as a minimum, in the capacity of a producer, director, or a screenwriter. Course may be repeated to a maximum of six credits.

PUBLIC RELATIONS

CPR517 Media Relations
3 credits Fall & Spring Semester & First Summer Session
The practice of media relations within the public relations milieu.
PREREQUISITE: ADMISSION TO MAJOR, CPR 311, SENIOR STANDING OR PERMISSION OF INSTRUCTOR

CPR582 International Public Relations
3 credits Fall & Spring Semester
History, theory, and practice of public relations in a global, multi-cultural environment.
PREREQUISITE: ADMISSION TO MAJOR; SENIOR STANDING OR PERMISSION OF INSTRUCTOR

CPR584 Public Relations Management
3 credits Spring Semester
Principles and practice of public relations management in a variety of contexts including agency, consultancy, corporate, and nonprofit.
PREREQUISITE: ADMISSION TO MAJOR, CPR 311, AND SENIOR STANDING OR PERMISSION OF INSTRUCTOR

CPR590 Special Projects: Public Relations
3 credits Offered By Announcement Only
This course subject matter varies according to announced special topic. See class schedule for details.
PREREQUISITE: ADMISSION TO THE MAJOR, CPR 311, SENIOR STANDING, PERMISSION OF INSTRUCTOR, AND PERMISSION OF PROGRAM DIRECTOR

CPR599 Advanced Projects and Directed Research in Public Relations
1- 6 credits Fall & Spring Semester & First & Second Summer Session
Individual study. May be repeated to a maximum of six credits.
PREREQUISITE: ADMISSION TO MAJOR, CPR 311, SENIOR STANDING, PERMISSION OF SUPERVISING INSTRUCTOR, AND PERMISSION OF PROGRAM DIRECTOR

CPR620 Public Relations Fundamentals
3 credits Fall Semester
A seminar to explore the theories and methodologies of public relations encompassing writing, principles and campaigns.
PREREQUISITE: GRADUATE STUDENTS AND PERMISSION OF INSTRUCTOR

CPR625 Seminar in Public Relations Administration
3 credits Spring Semester
Course analyzes organizational principles, internal budgeting, and evaluation of public relations departments and counseling firms.
PREREQUISITE: GRADUATE STUDENTS, CPR 620 OR PERMISSION OF INSTRUCTOR

CPR629 Public Relations Seminar
3 credits Offered By Announcement Only
A seminar to Identify and discuss the role of fundraising in the not-for-profit sector.
PREREQUISITE: COM 601 AND 602 OR 603.
CPR632 Seminar in Public Relations and Political Campaigns
3 credits  Offered By Announcement Only
A seminar to examine the role of public relations in American political campaigns.
PREREQUISITE: COM 601 AND 602 OR 603 OR PERMISSION OF INSTRUCTOR.

CPR633 Seminar in Public Relations: Lobbying and Pressure Groups
0-1 credits  Offered By Announcement Only
3 credits. A seminar to focus on public relations by lobby groups, pressure groups, and corporate institutions.
PREREQUISITE: COM 601 AND 602 OR 603, CPR 620 OR PERMISSION OF INSTRUCTOR.

CPR634 Seminar in Public Relations: Non-profit Groups and Governmental Institutions
3 credits  Offered By Announcement Only
A public seminar that focuses on non-profit organizations and governmental institutions.
PREREQUISITE: COM 601 AND 602 OR 603, CPR 620 OR PERMISSION OF INSTRUCTOR.

CPR644 Seminar in Public Relations Ethics
3 credits  Offered By Announcement Only
To explore through readings, discussion and research contemporary ethical issues in public relations.
PREREQUISITE: COM 601 AND 602 OR 603, CPR 620 OR PERMISSION OF INSTRUCTOR.

CPR690 Public Relations Practicum I
3 credits  Fall & Spring Semester
Professional functions related to public relations requirements in a professional environment acting as an account executive.
PREREQUISITE: COM 601, 602 OR 603; CPR 620 AND 12 HOURS IN PUBLIC RELATIONS SEQUENCE; PERMISSION OF INSTRUCTOR AND DIRECTOR.

VISUAL JOURNALISM
CVJ519 Interactive Storytelling
3 credits  Spring Semester
Digitization allows us to merge several forms of media that were not connected in the past. This course is intended as an exploration of how storytelling is re-inventing itself utilizing the new digital communication tools available to us today. This course will cover linear and non-linear storytelling techniques and production processes.
PREREQUISITE: CVJ 521, CVJ 522, CVJ 530, OR PERMISSION OF INSTRUCTOR.

CVJ521 Seminar in Visual Storytelling
3 credits  Fall Semester
An advanced seminar class designed to enhance the knowledge and practice of the visual storytelling narrative. This seminar stresses the importance of converging media, still images, video, and sound. Particular emphasis will be placed upon the creation of a multimedia portfolio.
PREREQUISITE: GRADUATE STATUS OR PERMISSION OF INSTRUCTOR.

CVJ522 Interaction Design and Information Visualization
3 credits  Fall Semester
The course will require an advanced use of typography, architecture of design, and creative style for layout and design for the print or online media. This is a portfolio design class. Each student will concentrate on an area of specialty within print or electronic design. All portfolios will be reviewed by outside art and design directors.
PREREQUISITE: GRADUATE STATUS OR PERMISSION OF INSTRUCTOR.
CVJ530 Programming for Interactivity  
3 credits  
Fall Semester  
This course is a multimedia class that will teach the fundamental programming skills required to create compelling online multimedia stories.  
PREREQUISITE: GRADUATE STATUS OR PERMISSION OF INSTRUCTOR

CVJ531 Database Journalism  
3 credits  
Fall Semester  
This course teaches data analysis and interactive deployment of data of the World Wide Web and other digital platforms.  
PREREQUISITE: GRADUATE STATUS OR PERMISSION OF INSTRUCTOR

CVJ541 Advanced Audio Video Narratives  
3 credits  
Spring Semester  
This course examines uses of audio and video to communicate journalism. Students learn to investigate, gather content, and produce documentary stories primarily for online distribution.  
PREREQUISITE: CVJ 521 OR PERMISSION OF INSTRUCTOR

CVJ550 3D Design and Graphics  
3 credits  
Spring Semester  
This course develops informational graphic procedures and practices as they pertain to print and online media, specifically in the context of news and journalism.  
PREREQUISITE: GRAD STATUS OR PERMISSION OF INSTRUCTOR

CVJ551 Advanced Programming  
3 credits  
Second Summer Session  
This course explores the role of the programmer as journalist. Students will perform the basic tasks of journalism from a programmatic perspective including: gathering, distilling and presenting information. Students will learn how to gather information from public databases and government websites. They will learn how to automate processes for filtering information and learn how to present this information in a visual and interactive news report. Students will also learn how to combine multiple sources of information, to personalize information for the end reader, and account for the relevant permutations of the data. Students will learn to build and query databases as well as mine and visually present the information using programming languages such as PHP and Python. Rapid development frameworks such as Django, Zend and Symfony will also be covered in the class.  
PREREQUISITE: CVJ 530, CVJ 521, CVJ 522, PERMISSION OF INSTRUCTOR

CVJ560 Team Multimedia Project  
1-3 credits  
Second Summer Session  
Students will work in a team to produce a documentary multimedia project in conjunction with one or more partner universities. Students will study the genre of documentary multimedia storytelling, research their assigned topic(s), content-gather, edit, wireframe, design and program the project and produce it on multiple platforms depending on the topic and intended audience. Students will use audio, photographic, video, info graphic and text reporting tools in producing the project. They will also study methodologies for evaluating multimedia and beta test the site using established research methodologies.  
PREREQUISITE: CVJ 530, CVJ 521, CVJ 522, COM 601, COM 603, CNJ 614 OR PERMISSION BY INSTRUCTOR
CVJ596 Special Topics in Visual Journalism
1- 6 credits    Fall & Spring Semester
This course subject matter varies according to announced special topic. See class schedule for details.
PREREQUISITE: PERMISSION OF INSTRUCTOR

CVJ599 Advanced Projects and Directed Research
3 credits                                                    Fall & Spring Semester
PREREQUISITE: PERMISSION OF SUPERVISING INSTRUCTOR

CVJ606 Multimedia Design
3 credits                                                             Fall Semester
This is a project-based course in multimedia design, with emphasis on visual concepts and graphics development. Students will be learning about the various software packages to design and integrate interaction into their projects. Topics covered include preparing existing content for multimedia journalism, animation, layout for interactive media, typography, photography and usability.
PREREQUISITE: OPEN ONLY TO SPANISH-LANGUAGE M.A., IN JOURNALISM MAJORS

CVJ607 Audiovisual Production
3 credits                                                           Spring Semester
A lab/lecture course focusing on the concepts of visual storytelling and on the skills needed to gather information in the visual storytelling process. Students work in teams with still photography, video and audio-gathering devices to document community life.
PREREQUISITE: OPEN ONLY TO SPANISH-LANGUAGE M.A., IN JOURNALISM MAJORS

CVJ649 Team Multimedia Project
3 credits                                             First & Second Summer Session
PREREQUISITE: CVJ 521, CVJ 522, CVJ 530, COM 605, CNJ 614, OR PERMISSION OF INSTRUCTOR

CVJ715 Multimedia Project
1- 6 credits    Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: COMPLETION OF ALL REQUIRED COURSE WORK

CVJ738 M.A. Multimedia Project
1- 6 credits    Fall & Spring Semester & First & Second Summer Session
Students, in consultation with program faculty, will complete a final project that reflects in-depth knowledge and analysis of a subject and professional competence in multimedia storytelling. Course may be repeated to a maximum of six credits.
PREREQUISITE: COMPLETION OF COURSE WORK PER PROGRAM REQUIREMENTS
CO-REQUISITE: DISSERTATION TOPIC
SCHOOL OF EDUCATION

EDUCATIONAL & PSYCHOLOGICAL STUDIES

EPS505 Lifespan Human Development
3 credits
Spring Semester
Theories and research relating to the biophysical, cognitive, and psychosocial domains of human lifespan development.
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR

EPS506 Foundations of Mental Health Counseling
3 credits
Offered By Announcement Only
Students will learn basic concepts and skills for mental health counselors in a multicultural world.
PREREQUISITE: ADVANCED UNDERGRADUATE OR GRADUATE STANDING.

EPS509 Field Studies in Education
1- 6 credits
Fall & Spring Semester
Individual study of a school or school system, identifying its strengths and weaknesses, and making positive recommendations.
PREREQUISITE: APPROVAL OF ADVISOR

EPS510 Professional, Legal and Ethical Issues in Counseling
3 credits
First Summer Session
Professional, legal, ethical, and licensing issues in the counseling profession.
PREREQUISITE: GRADUATE STANDING IN THE COUNSELING PROGRAM

EPS511 Lifestyle and Career Counseling
3 credits
Spring Semester
An introductory course in career development and career counseling, focusing on theories of career development, counseling tools, strategies, and sociological, economic, and psychological influences on the American worker.
PREREQUISITE: EPS 513 OR PERMISSION OF INSTRUCTOR.

EPS512 Assessment Strategies for Counselors I
3 credits
Spring Semester
This course places emphasis on diagnosis, appraisal, assessment, and testing for individual and interpersonal disorders. It addresses statistical procedures and psychometric principles necessary for responsible test use and exposes the student to a variety of test and non-test assessment techniques in marriage and family, and mental health counseling.
PREREQUISITE: GRADUATE STANDING IN COUNSELING PROGRAM

EPS513 Counseling Process and Practice
3 credits
Fall Semester
The development of basic communication and clinical skills necessary for establishing the counseling relationship and conducting therapy.
PREREQUISITE: GRADUATE STANDING IN COUNSELING PROGRAM

EPS514 Psychosocial Bases of Social and Cultural Diversity
3 credits
Fall Semester
Interrelationship between psychology and sociology in understanding development of diversity in human social systems. Implications for counseling and therapy.
PREREQUISITE: EPS 505 OR EQUIVALENT OR PERMISSION OF INSTRUCTOR
EPS515 Dynamics of Marriage and Family Systems  
3 credits  
Fall Semester  
Introduction to the history and development of marriage and family systems theory as a method for understanding individuals' behavior and functioning. Introduction to several modes of family therapy. Throughout the course, lectures will also be integrated with other topics including race, culture, gender, sexual orientation, ability.  
PREREQUISITE: GRADUATE STANDING IN COUNSELING PROGRAM OR PERMISSION OF INSTRUCTOR

EPS526 Counseling in Community Settings  
3 credits  
Fall Semester  
Exploration of a variety of perspectives on community services relevant to mental health counselors. Topics include: the variety of community settings; community, national, and international diversity in mental health services; diversity of clients (e.g., cultures, religions, GLBT, elderly, social classes, disabilities); mental health funding; the role of politics, policy, advocacy, and research; interviewing across cultures.  
PREREQUISITE: GRADUATE STANDING OR PERMISSION OF INSTRUCTOR

EPS531 Organization Development  
3 credits  
Offered By Announcement Only  
Techniques, strategies, and models of Organizational Development as they relate to various kinds of institutions. Simulations and actual interventions are stressed.

EPS533 Organization and Administration of Higher Education I  
3 credits  
Fall Semester  
Theoretical approaches from organizational analysis. Applications to problems, processes, and patterns of higher education institutions. Consideration given to legal status, governance patterns, and external relations. Administrator, faculty, trustee, and student roles are also explored.

EPS534 Theories of Supervision  
3 credits  
Offered By Announcement Only  
Examination of the elements of human behavior involved in successful supervision of instruction. Survey of current supervisory practices in the schools. Consideration of leadership theory.

EPS539 Effective Teaching, Learning, Assessment & Curriculum in Higher Education  
3 credits  
Fall Semester & Second Summer Session  
Provides an overview of current theories, research, and best practices in effective teaching, learning, assessment, and curricular design.  
PREREQUISITE: PERMISSION OF INSTRUCTOR

EPS543 The Community College  
3 credits  
Offered By Announcement Only  
An overview of American community colleges including historical evolution, purposes and functions, characteristics of students and faculty, organization and administration, curricula, current issues, and trends.
EPS544 Assessing Learning in the Community College

3 credits Offered By Announcement Only
Assessment and analysis of learning processes and outcomes in higher education. Formative and summative assessment, data analysis and interpretation are included. Class activities include: lectures, group projects, collaborative learning experiences, reports, participation in assessment strategies, role playing, and demonstration of assessment techniques.

EPS545 Administration of Student Affairs

3 credits First Summer Session
History and philosophy of student affairs will be addressed as well as principles and organization of student affairs administration, current problems, procedures, and recent developments.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EPS550 Educational Measurement and Evaluation

3 credits Offered By Announcement Only
Basic principles of measurement as they apply to the construction of teacher-made tests and the selection and use of standardized tests. Attention is also given to the use of measurement instruments in connection with both formative and summative evaluation. Behavioral objectives are considered in the context of criterion-referenced and mastery tests.
PREREQUISITE: TAL 260 OR PERMISSION OF INSTRUCTOR.

EPS553 Introductory Statistics

3 credits Fall Semester & Second Summer Session
Basic Statistical procedures will be discussed including measures of central tendency, variability and relationship, sampling, and basic tests of statistical significance.

EPS554 Essentials of Research in Social and Behavioral Sciences

3 credits Fall Semester
Study of the standards methods and techniques of research in the behavioral and social sciences. Brief orientation to quantitative and qualitative procedures used in the analysis and interpretation of research data are emphasized.

EPS558 Community Youth Development

3 credits First Summer Session

EPS565 Family Therapy with Ethnic Minority Families

3 credits Offered By Announcement Only
A course in special issues and strategies in family therapy with minority populations focusing on African American and Hispanic clients.
PREREQUISITE: EPS 280 OR 515 OR 612 OR PERMISSION OF INSTRUCTOR.

EPS568 Computer Applications in Educational and Behavioral Science Research

3 credits Offered By Announcement Only
An introduction to the use of microcomputer statistical packages in social science research, with emphasis given to SPSS for Windows. Course content will cover a broad range of activities encountered in the data analytic process including planning and creating a database, data coding, file manipulation tasks, data screening, and statistical analysis.
PREREQUISITE: EPS 553 OR EQUIVALENT WITH PERMISSION OF INSTRUCTOR.
EPS570 Basic skills in Counseling and Interviewing
3 credits
Spring Semester
Introductory course on essential skills used in counseling and interviewing. Through lectures, discussions, and small group exercises, students will explore their natural style of helping and learn effective listening and communication skills. This course is not intended to train students to become a professional counselor.
PREREQUISITE: ADMISSION IN THE HIGHER EDUCATION PROGRAM OR PERMISSION OF INSTRUCTOR

EPS590 Workshop in Education
1-3 credits
Offered By Announcement Only
Study in special interest areas in education.

EPS591 Workshop in Education
1-3 credits
Offered By Announcement Only
Study in special interest areas in education.

EPS592 Workshop in Education
1-3 credits
Offered By Announcement Only
Study in special interest areas in education.

EPS593 Workshop in Education
3 credits
Fall & Spring Semester
Study in special interest areas in education.

EPS594 Workshop in Education
1-3 credits
Offered By Announcement Only
Study in special interest areas in education.

EPS595 Workshop in Education
3 credits
Fall & Spring Semester
Study in special interest areas in education.

EPS596 Workshop in Education
1-3 credits
Offered By Announcement Only
Study in special interest areas in education.

EPS597 Workshop in Education
1-3 credits
Offered By Announcement Only
Study in special interest areas in education.

EPS598 Workshop in Education
1-3 credits
Offered By Announcement Only
Study in special interest areas in education.

EPS599 Workshop in Education
1-3 credits
Offered By Announcement Only
Study in special interest areas in education.

EPS601 Philosophy of Education
3 credits
Offered By Announcement Only
Analysis of the works of major educational theorists—both historical and contemporary. The role of education in shaping and defining people and culture will be emphasized.
EPS602 Psychosocial Change and Well-Being in Education
3 credits  
Second Summer Session
PREREQUISITE: GRADUATE ADMISSION

EPS603 Higher Education in the United States: From Harvard to Present
3 credits  
Fall Semester
Broad view of issues and problems in higher education. Fundamental ideas and significant literature are analyzed from historical, philosophical, and societal perspectives.

EPS604 Group Dynamics and Communication Skills
3 credits  
Offered By Announcement Only
Emphasis on group dynamics, group procedures and communication skills.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EPS605 Psychological Bases of Education
3 credits  
Fall Semester
Review and extension of basic principles of psychology underlying educational practice. Basic concepts of educational psychology which contribute to effective education will be discussed.
PREREQUISITE: TAL 260 OR EQUIVALENT.

EPS606 Community Well-being and Change: Theory and Practice
3 credits  
Fall Semester
This course is designed to promote an understanding of the factors associated with healthy communities. It provides a comprehensive overview of the relevant skills and theories including: ecological/systems theory/models; community theories (sense of community, social capital, environmental psychology); and critical social theory, social justice, and social determinants of well-being.
PREREQUISITE: ENROLLMENT IN COMMUNITY & SOCIAL CHANGE MASTERS DEGREE PROGRAM OR PERMISSION OF INSTRUCTOR.

EPS607 Advanced Individual Study
1-6 credits  
Fall & Spring Semester
Individual work on a special project under faculty guidance.
PREREQUISITE: APPLICATION FOR ADVANCED INDIVIDUAL STUDY FORM REQUIRED.

EPS608 Advanced Individual Study
1-3 credits  
Fall & Spring Semester
Individual work on a special project under faculty guidance.
PREREQUISITE: APPLICATION FOR ADVANCED INDIVIDUAL STUDY FORM REQUIRED.

EPS609 Managing Community Organizations
3 credits  
First Summer Session
This course is designed to develop leadership skills for individuals engaged with community based organizations. Topics will include administrative, management, and fiscal issues. Grant writing, fund-raising, organizational communication, program planning, marketing, innovation, strategic planning, and accountability issues will be examined from a nonprofit organizational perspective.
PREREQUISITE: ENROLLMENT IN COMMUNITY & SOCIAL CHANGE MASTER'S DEGREE PROGRAM OR PERMISSION OF INSTRUCTOR.
EPS610 Therapeutic Group Procedures
3 credits First Summer Session
This course examines both the theory and practice of group counseling. The course covers therapist issues, patient selection criteria, group structuring as well as basic therapeutic techniques. The course prepares students to design structured counseling groups, to prepare group counseling materials, and to lead counseling groups of various types.
PREREQUISITE: EPS 612 OR EQUIVALENT.

EPS611 Assessment Strategies for Counselors II
3 credits First Summer Session
This course emphasizes use of procedures that facilitate preparation for, and evaluation of, mental health interventions. This course involves intensive study of theory and research relating to various models and processes of clinical assessment and practice in the performance of psychological evaluations.
PREREQUISITE: EPS 612 AND 613 OR EQUIVALENT.

EPS612 Counseling Theories and Practice
3 credits Spring Semester
Study of theories and concomitant practices in counseling and therapy.
PREREQUISITE: EPS 510 OR EQUIVALENT.

EPS613 Psychopathology for Counselors
3 credits Fall Semester
In depth introduction to abnormal human behavior patterns of concern to mental health professionals. Clinical conditions will be examined within the context of currently most viable theory and research relating to etiology, assessment, diagnosis and treatment.
PREREQUISITE: GRADUATE STANDING IN COUNSELING PROGRAM

EPS614 Counseling and Sexuality
3 credits Second Summer Session
Emphasis is placed on self-awareness and acceptance of all dimensions of human sexuality. Readings and classroom activities focus on biological aspects of sexuality, an understanding of sexual dysfunctions, and their treatment.
PREREQUISITE: EPS 505 AND 513

EPS615 Family Therapy
3 credits Spring Semester
Concentrated study of several approaches to family therapy including systemic and psychosocial perspectives. Theory and techniques of family therapy are taught in lecture, videotape, and simulation.
PREREQUISITE: EPS 515 OR PERMISSION OF INSTRUCTOR.

EPS616 Therapy for Couples
3 credits First Summer Session
Theory and technique linked to working with couples, in marriage and in other relationships.
PREREQUISITE: EPS 515 AND 612 OR PERMISSION OF INSTRUCTOR

EPS617 Seminar in Counseling Psychology
2-9 credits Offered By Announcement Only
A rotating-topic seminar in which various special topics will be presented. The particular topic being covered in a particular semester will be announced in the published class schedule.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
EPS618 Practicum in Counseling I  
1- 3 credits  Fall & Spring Semester  
Supervised experience at the Institute for Individual and Family counseling and other appropriate clinical settings relating theoretical formulations to intervention strategies appropriate to specialization.  
PREREQUISITE: PERMISSION OF PROGRAM COORDINATOR

EPS619 Practicum Laboratory I  
1- 3 credits  Fall & Spring Semester & First & Second Summer Session  
Individual, dyad, and small group supervision.  
PREREQUISITE: PERMISSION OF PROGRAM COORDINATOR

EPS620 Counseling Psychology: Theory, Research and Practice  
3- 6 credits    Fall & Spring Semester  
Orientation to counseling psychology as a discipline including theories, research methodology, contemporary research, lifestyle and career development theory, and professional issues. Required of all first year counseling psychology students. May be taken for 3 or 6 credits to a maximum of 12 credits.  
PREREQUISITE: ADMISSION TO COUNSELING PSYCHOLOGY DOCTORAL PROGRAM.

EPS621 Psychological Appraisal I  
3 credits  Fall Semester  
Orientation to psychological appraisal with emphasis on development of skill in assessment of intellectual functioning.  
PREREQUISITE: DOCTORAL STUDENT IN COUNSELING OR CONSENT OF INSTRUCTOR.

EPS622 Psychological Appraisal II  
3 credits  Spring Semester  
Orientation to psychological appraisal with emphasis on use of procedures which facilitate preparation for, and evaluation of, intervention efforts in the personality and social-behavioral areas.  
PREREQUISITE: EPS 621.

EPS623 Substance Abuse and Addictions: Theories and Counseling  
3 credits  Fall Semester  
Theories and research on individual, systemic causes, and outcomes of substance abuse, and concomitant practices in counseling and therapy.  
PREREQUISITE: EPS 612 OR PERMISSION OF INSTRUCTOR.

EPS624 Theory and Practice with Children and Adolescents  
3 credits  Second Summer Session  
Course prepares students to provide preventive and therapeutic interventions with children and adolescents including theory, research, and practice.  
PREREQUISITE: EPS 612 OR PERMISSION OF INSTRUCTOR

EPS625 Research and Program Evaluation in Counseling  
3 credits  Spring Semester  
Course focuses on the interpretation and application of research data as applied to clinical practice. Skills in using behavioral research-based literature to identify, evaluate and interpret appropriate interventions are also emphasized.  
PREREQUISITE: EPS 510, 512, 514, 612 AND 613 OR EQUIVALENTS OR PERMISSION OF INSTRUCTOR.
EPS626 Bereavement and Attachment Factors for Children and Families
1-3 credits  First Summer Session
This course will focus on attachment and development of factors as they relate to the bereavement and loss experience of children, adolescents, young adults, and families. Effective methodology in the care of these populations will be explored. Content will include the trajectory of grief in childhood development, manifestation of loss and grief, risk factors in the loss experience, attachment issues, types of loss, popular notions of loss and treatment, and best practice in bereavement work.

EPS628 Doctoral Practicum I
1-9 credits  Fall & Spring Semester
Supervised counseling experiences with clients at the Institute for Individual and Family Counseling. Individual and small group supervision by program faculty.
PREREQUISITE: ADMISSION TO COUNSELING AND PSYCHOLOGY DOCTORAL PROGRAM

EPS629 Doctoral Practicum II
1-9 credits  Fall & Spring Semester
Supervised counseling and assessment experience in outside agencies, hospitals and community settings. Small group case conference conducted by program faculty.
PREREQUISITE: EPS 628

EPS630 Advanced Practicum in Counseling Psychology
1-9 credits  Fall & Spring Semester & First & Second Summer Session
Supervised experience appropriate to the work of the counseling psychologist.
PREREQUISITE: EPS 629 AND PERMISSION OF INSTRUCTOR

EPS631 Student Diversity in American Higher Education
3 credits  Fall Semester
Emphasis on the diversity of today’s undergraduate students. An examination of the sociological context and philosophical orientation of contemporary college students is included.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EPS632 Preparing Future Faculty Seminar
1-3 credits  Fall & Spring Semester
The goal of this course is to introduce you to the larger role of university professor. The class is designed to give you some general sense of university structure and of the breadth of opportunities in higher education, to think through your own vision of “being a professor” particularly the part of that role that focuses on teaching, and to help you on the job search by preparing a professional portfolio that will help you get that first job and, hopefully, set you on a smooth career path. The PFF seminar will provide you with contextual and interdisciplinary knowledge of professoriate. Each seminar will be designed to aid you in your goal to become an outstanding faculty member. PFF will give you an overview of life on the academic job market and the pre-tenure years. It is your responsibility to tailor that information to fit your needs. It is expected that you take the information you learn in PFF and speak with mentors in your discipline to glean further insights into faculty life.

EPS633 Organization of Higher Education II: Governance, Leadership and Finance
3 credits  Fall Semester
Provides an overview of selected topics in governance, administrative leadership and finance in higher education.
PREREQUISITE: EPS 533 OR PERMISSION OF INSTRUCTOR.
EPS634 Supervision in Counseling Psychology  
3 credits  
Fall & Spring Semester  
The course includes a didactic presentation of theories of supervision and consultation. Application of supervision theories with opportunities to practice beginning supervisor skills.  
PREREQUISITE: EPS 628

EPS635 College Student Development: Theory, Research and Practice  
3 credits  
Spring Semester  
Emphasis on student growth and development during college and an analysis of the factors which affect development along cognitive and affective dimensions. An in-depth examination of college student development theories is included.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EPS636 Critical Issues in Student Affairs  
3 credits  
Offered By Announcement Only  
Emphasis on the most pressing issues facing the profession of student affairs today including diversity, funding, staff retention and the law and student affairs.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EPS637 Seminar in Curriculum and Supervision  
3 credits  
Offered By Announcement Only  
Laboratory course for developing curriculum materials and making curriculum changes. Students will develop materials and plans needed in their institutions.

EPS640 Enrollment Management: Theory and Practice  
3 credits  
Fall Semester  
Comprehensive overview of principles and practices of a strategic process that begins with recruitment and continues through graduation.

EPS641 Advanced Seminar in Enrollment Management  
3 credits  
Spring Semester  
In-depth exploration of topics in enrollment management, including market research, market testing, pricing strategies, strategic planning, and development of a future vision.  
PREREQUISITE: EPS 640.

EPS642 Curricula in Higher Education  
3 credits  
Offered By Announcement Only  
Consideration of the philosophical, psychological, and social bases of general, liberal, and graduate education. Analytical review of research on collegiate curriculums, programmatic innovations, and their effect are also included.

EPS643 Nature of Collegiate Instruction  
3 credits  
Offered By Announcement Only  
Role of the college professor, academic freedom, and tenure. Organization and presentation of knowledge in one's discipline will be emphasized. Use of micro-teaching and other advanced techniques as well as the development of course outlines and evaluation of self-instructional procedures will also be covered.
EPS644 Development & Change in Community Organizations: Theory & Practice
3 credits
Spring Semester
This course focuses on the unique role of non-profit, community-based organizations in promoting human and community development. Students will engage in an analysis of the range of functions that organizations serve and the various organizational strategies used in community settings.

EPS646 Seminar in Higher Education/Enrollment Management: Contemporary Issues
3 credits
Fall Semester

EPS647 Seminar in Higher Education Administration: Contemporary Issues
3 credits
Spring Semester
ONLINE course: Special refund policies apply. No refunds given after the start of the course. Open to only students admitted to the Online Graduate Certificate Program. Please contact Carol Wilson at umiamionline@miami.edu regarding registration. PREREQUISITE: ADMISSION TO DOCTORAL OR SPECIALIST PROGRAM OR PERMISSION OF INSTRUCTOR.

EPS648 Multicultural Communities in a Globalized Society
3 credits
Fall Semester
This course examines the relationship between multiculturalism and globalization and how these concepts impact education and the world at large. Topics include dimensions of human diversity, identities and acculturation; race and class; gender and power; children and youth; social inclusion and social justice; health disparities; poverty and work; racism and inequality. PREREQUISITE: ENROLLMENT IN COMMUNITY & SOCIAL CHANGE MASTERS DEGREE PROGRAM OR PERMISSION OF INSTRUCTOR

EPS650 Meta-analytic methods for research synthesis.
3 credits
Fall Semester
Meta-analysis is the general practice of combining, comparing, and interpreting statistics across a set of studies that investigate the same (or similar) phenomena using a properly motivated theoretical framework. Meta-analysis has become a popular tool in a variety of research disciplines, including the social sciences, education, medicine, and business. This course provides a thorough introduction to the theoretical foundations of meta-analysis, discusses commonly used statistical techniques, and analyzes several examples of the existing meta-analysis. Emphasis is placed on application, so that students are trained to independently perform a meta-analysis, from start to finish, in whatever substantive area interests students the most. PREREQUISITE: EPS 671 (ANOVA) AND EPS 672 (REGRESSION ANALYSIS), OR EQUIVALENT COURSES.

EPS651 Survey Research Methods
3 credits
Fall Semester
Focus on standards and practical strategies for designing different types of survey instruments and conducting survey research. Students are required to develop a proposal for survey research, develop a survey instrument, and conduct small pilot study by collecting, analyzing, and reporting survey data. PREREQUISITE: EPS 670 AND 533 OR EQUIVALENTS.
EPS652 Nonparametric Methods for Quantitative Analysis
3 credits
Offered By Announcement Only
A course in univariate nonparametric statistical techniques for applications in the behavioral and social sciences. These "sturdy" statistical methods will be developed by analogy with the corresponding parametric models. The SPSS-X statistical package will be used to analyze data sets provided by the instructor.
PREREQUISITE: EPS 553.

EPS653 Advanced Statistical Methods
3 credits
Offered By Announcement Only
A course in univariate parametric statistical inference, topics included are hypothesis testing, estimation, sampling, analysis of variance, correlation analysis, simple, and multiple regression.
PREREQUISITE: A BASIC COURSE IN STATISTICS AND A BASIC COURSE IN MEASUREMENT.

EPS654 Program Evaluation
3 credits
Fall Semester
Terminology, models, standards, practices, and common problems associated with program evaluation in Educational and Social Service settings. Prerequisite: EPS 670 and 553 or equivalents.
PREREQUISITE: EPS 670 AND 553 OR EQUIVALENTS.

EPS658 Seminar in Community & Social Change
3 credits
Fall & Spring Semester & First & Second Summer Session

EPS659 Field Experience in Educational Research
2-6 credits
Fall & Spring Semester
A total of 125 hours of supervised practical experiences in educational research. Emphasis is placed on actual participation in a wide variety of on-going research projects through associations with an approved educational R & D center. Normally taken in two or three credit blocks.
PREREQUISITE: PERMISSION OF ADVISOR.

EPS661 Measurement and Psychometric Theory
3 credits
Spring Semester
This course provides an introduction to the theory and application of measurement and psychometric models used in the behavioral sciences.
PREREQUISITE: EPS 672 OR EQUIVALENT COURSE ON REGRESSION ANALYSIS.

EPS662 Item Response Theory
3 credits
Fall Semester
The purpose of the course is to provide training in the theory and application of item response theory (IRT) as it pertains to educational and psychological measurements. Focus will be given to discussing IRT as a measurement model used to measure the properties of items and individuals. Particular attention will be given to contrasting the properties of the IRT model to the classical test theory, and the application of IRT to actual data sets.
PREREQUISITE: EPS 672, EPS 661

EPS663 Professional Psychological Spanish
3 credits
Second Summer Session
Acquisition of Spanish language skills necessary for functioning as a psychologist or mental health professional. Implications of language for the therapy process. Professional roles of bilingual counselors and psychologists.
PREREQUISITE: SPANISH FLUENCY.
EPS664 Hispanic and Latino Psychology
3 credits
Offered By Announcement Only
Human psychological functioning from an Hispanic and Latino perspective with a focus on Hispanic and Latino scholars in psychology.
PREREQUISITE: MULTICULTURAL COUNSELING OR EQUIVALENT.

EPS665 Psychological Interventions with Hispanic/Latino Populations
3 credits
Fall Semester
Explores the diversity of experiences among Hispanics and their implications for therapy. Topics include: racial diversity among Hispanics, sociopolitical factors in mental health, the impact of immigration on mental health, special psychological treatments: trauma treatment, family interventions and bilingual counseling.
PREREQUISITE: COURSE IN MULTICULTURALISM OR DIVERSITY OR PERMISSION OF INSTRUCTOR.

EPS667 Seminar in Educational Research
3-6 credits
Offered By Announcement Only
Seminar providing intensive study of contemporary advanced research methodologies in education for example, multivariate statistical models, qualitative analysis, latent trait theory, and causal models. Topics and faculty rotate. Students can enroll in this course for two semesters.
PREREQUISITE: ADMISSION TO DOCTORAL PROGRAM OR PERMISSION OF INSTRUCTOR.

EPS670 Introduction to Research Methods
3 credits
Fall Semester
The nature of disciplined inquiry in behavioral and social sciences. Includes philosophy of science, quantitative and qualitative research, basic concepts in sampling and measurement, and systematic searches of the research literature. Students required to complete literature search on a topic of their interest and submit a report of their findings.
PREREQUISITE: PREREQUISITE OR COREQUISITE: EPS 553 OR EQUIVALENT.

EPS671 General Linear Models
3 credits
Fall & Spring Semester
Group comparative designs, univariate parametric and nonparametric methods and statistical inference will be discussed. Topics include probability, sampling, estimation, ANOVA, ANCOVA. Students will be required to use computer packages (SAS/SPSS).
PREREQUISITE: EPS 553 OR EQUIVALENT

EPS672 Regression Methods
3 credits
Spring Semester
This course will provide: (1) a conceptually-oriented introduction to regression methods and (2) opportunities to learn related data-analytic techniques.
PREREQUISITE: EPS 553; EPS 671

EPS673 An Introduction to Structural Equation Modeling for Multivariable Data
3 credits
Spring Semester
This course will provide (1) a conceptually-oriented introduction to Structural Equation Modeling for multivariate data and (2) opportunities to learn related data-analytic techniques.
PREREQUISITE: EPS 670; 671 AND 672.
EPS674 Introduction to Multilevel Modeling
3 credits  Fall Semester
This course will provide: (1) a conceptually-oriented introduction to multilevel modeling and (2) opportunities to learn related data-analytic techniques.
PREREQUISITE: EPS 671 & EPS 672 OR PSY631 & PSY632

EPS675 Qualitative Methods I
3 credits  Fall Semester
An overview of the history, nature, characteristics, strategies, and ethics of qualitative research methods. Critical analysis and evaluation of various types of qualitative studies, including design, sampling, processes of data collection and analysis, and reporting results.
PREREQUISITE: EPS 670 AND (671 OR 672) OR EQUIVALENTS OR PERMISSION OF INSTRUCTOR.

EPS676 Qualitative Methods II: Case Studies and Grounded Theory
3 credits  Spring Semester
Types and designs of case studies, development of protocol, field work, data analysis, and report writing. Practical procedures and techniques for conducting grounded theory studies, including data coding and analysis, and reporting of results.
PREREQUISITE: EPS 675 OR EQUIVALENTS.

EPS677 Qualitative Methods II: Interviews and Content Analysis
3 credits  Spring Semester
Sociological and oral history interview methods, including methodological issues, computer-based coding, decoding, and interpreting data. Visual and text based content analysis, scoring schemas, and inter-rated reliability are also covered.
PREREQUISITE: EPS 675 OR EQUIVALENT.

EPS678 Applied Multivariate Statistics
3 credits  Spring Semester
The aim of this course is to provide a solid foundation in the basic concepts of multivariate statistics, and its application to practical research questions. This course extends the content of EPS 671 (ANOVA methods) and EPS 672 (regression methods) to cover methods used when there are multiple dependent variables to be modeled simultaneously. This course focuses on the traditional multivariate methods (as opposed to the contemporary models of structure equation modeling) that see wide use in the behavioral sciences. The general topics covered in the course include, but are not limited to: introductory matrix algebra, multivariate analysis of variance (MANOVA), factorial MANOVA, discriminate function analysis, and exploratory factor analysis. In all cases, this course is intended to provide a solid conceptual background of these topics, as well as a thorough description/practice of the application of these topics to real data scenarios.
PREREQUISITE: EPS 671, EPS 672

EPS679 Research Practicum
1- 6 credits  Fall & Spring Semester
Hands on experience in various aspects and processes in research.
PREREQUISITE: DOCTORAL STANDING OR PERMISSION OF INSTRUCTOR.
EPS680 Cultural Diversity and Mental Health
3 credits  Fall Semester
Advanced training in conceptualizing the individual within cultural and sociopolitical contexts with purpose of creating more reflective and intentional clinicians. Includes learning skills for improving the lives of clients in these areas.
PREREQUISITE: ADMISSION TO THE COUNSELING PSYCHOLOGY DOCTORAL PROGRAM OR PERMISSION OF THE INSTRUCTOR.

EPS685 Dissertation Seminar
3 credits  Offered By Announcement Only
The development and analysis of dissertation proposals will be required. Detailed coverage of the research process, proposal elements, dissertation writing and all aspects of doctoral research will be emphasized. Extensive feedback on research ideas and writing is involved.
PREREQUISITE: COMPLETION OF RESEARCH COMPETENCIES AND/OR MAJOR PORTION OF ALL COURSES IN DOCTORAL PROGRAM.

EPS687 Internship in College Teaching
3 credits  Fall & Spring Semester
A program in observation and supervised teaching in the community junior or liberal arts college. The student spends 15-20 hours per week. Included is a seminar held with the college supervisor which meets several times during the semester.
PREREQUISITE: APPROVAL OF COMMITTEE ON INTERNSHIP.

EPS688 Practicum: Administration of Higher Education
1-6 credits  Fall & Spring Semester & First & Second Summer Session
This course is designed to provide students with an opportunity to develop professional competencies while they apply theory to practice. Opportunities can be pursued in enrollment management or student affairs related offices either on campus or at other higher education institutions. Students will contract for the type of experience desired and a formal research paper and presentation will culminate this activity.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EPS698 Advanced Individual Study
1-3 credits  Fall & Spring Semester & First & Second Summer Session
Individual work on a special project under faculty guidance.
PREREQUISITE: APPLICATION FOR ADMISSION TO ADVANCED INDIVIDUAL STUDY FORM REQUIRED

EPS699 Advanced Individual Study
1-3 credits  Fall & Spring Semester & First & Second Summer Session
Individual work on a special project under faculty guidance.
PREREQUISITE: APPLICATION FOR ADMISSION TO ADVANCED INDIVIDUAL STUDY FORM REQUIRED

EPS702 Advanced Practicum in Counseling
1-6 credits  Fall & Spring Semester
Group supervision meetings in which students present case conceptualizations, review information from professional sources regarding their clients, and discuss the supervisory and organizational dynamics of their outplacements settings.
PREREQUISITE: EPS618

EPS703 Internship in Counseling Psychology
1-6 credits  Fall & Spring Semester
Supervised internship in Counseling Psychology in an approved facility.
PREREQUISITE: PERMISSION OF PROGRAM FACULTY.
EPS710 Master's Thesis
1-6 credits Fall & Spring Semester & First & Second Summer Session
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

EPS720 Research in Residence
0 credit Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in EPS 710 (usually six credits). Credit not granted. May be regarded as full time residence.

EPS725 Continuous Registration--Master's Study
0 credit Fall & Spring Semester & First & Second Summer Session
To establish residence for non-thesis master's students who are preparing for major examinations. Credit not granted. Regarded as full time residence.

EPS730 Pre-Candidacy to Dissertation Research
1-12 credits Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor but not for less than a total of 24. Not more than 12 hours of EPS 730 may be taken in a regular semester, nor more than six in a summer session. Where a student has passed his/her (a) qualifying examinations, and (b) is engaged in an assistantship, he/she may still take the maximum allowable credit stated above.
PREREQUISITE: ADMISSION TO DOCTORAL PROGRAM

EPS735 Doctor of Education Dissertation
1-12 credits Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ed.D. The student enrolls for credit as determined by his/her advisor. Credit is not awarded until the doctoral project has been accepted. Total enrollment may not exceed 12 credits.
PREREQUISITE: ADMISSION TO DOCTORAL PROGRAM

EPS740 Post-Candidacy Dissertation Research
1-12 credits Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: ADMISSION TO DOCTORAL PROGRAM

EPS750 Research in Residence
0 credit Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D. and Ed.D, after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

KINESIOLOGY & SPORT SCIENCES

KIN502 Sport Sponsorship and Promotion
1-3 credits First Summer Session
KIN515 Nutrition Diet and Exercise
3 credits
First Summer Session
Students will learn the latest concepts in weight management, physical fitness, and healthy eating. They will be able to understand the complex interplay of carbohydrates, protein, fat, water, fiber, vitamins, and minerals in the nourishment of their body and overall well-being. They will also examine serious health issues such as the use/misuse of anabolic steroids, weight control, and eating disorders.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

KIN520 Cellular Exercise Physiology
3 credits
Spring Semester
The course examines Bioenergetics and Muscular Physiology in training and detraining. Topics include the energy systems and their functional application during exercise, muscle structure and function, cellular and sub-cellular modifications of organelles and contractile mechanisms as result of training and physiological bases of training techniques.

KIN521 Systemic Exercise Physiology
0-3 credits
Fall Semester
The study of the physiological effects of acute vs. chronic training on homeostatic function, musculoskeletal systems, energy system function, cardiovascular and the pulmonary systems. Students will be able to understand and interpret terminology and research literature published in the field.
PREREQUISITE: ONE YEAR OF UNDERGRADUATE CHEMISTRY AND ONE YEAR OF UNDERGRADUATE HUMAN BIOLOGY.

KIN522 Basic Statistics in Kinesiology and Sport Sciences
3 credits
Fall Semester & First & Second Summer Session
Introduction to basic statistical techniques commonly used in the Exercise and Sport Sciences. Designed as a prerequisite for KIN 646 (Formally ESS 646).

KIN523 Athletic Training Techniques - Assessment
3 credits
Fall Semester
This course will introduce the basic concepts related to injury evaluation. With this information, and with the development of basic skills, the student should be able to form an impression of the nature of most musculoskeletal injuries.
PREREQUISITE: KIN 525 AND 588 (FORMALLY ESS 525 AND ESS 588).

KIN524 Athletic Training Techniques - Rehabilitation
3 credits
Fall Semester
This course will introduce theoretical concepts that must be understood in order to be able to rehabilitate a musculoskeletal injury. Regarding actual rehabilitation techniques, the emphasis will be on therapeutic exercise with only a brief introduction to therapeutic modalities.
PREREQUISITE: KIN 525 AND 588 (FORMALLY ESS 525 AND ESS 588).

KIN525 Advanced Kinesiology
3 credits
Fall & Spring Semester
In-depth study of the human skeletal and muscular systems with a focus on the mechanics of movement as related to physical activity, sports, and athletics.
PREREQUISITE: ESS 245 OR PERMISSION OF INSTRUCTOR.
KIN527 Community and Global Nutrition
3 credits Fall & Spring Semester
This course is designed to provide an overview of nutritional issues & related aspects of infectious and chronic disease impacting the health and performance of athletes, individuals & groups domestically & globally. Economic and environmental issues which impact nutritional status and deficiency in the Western societies & third world countries will be addressed. An international and cultural perspective on food, eating behaviors and customs will be explored.

KIN530 Laboratory Techniques in Functional Evaluation of Skeletal Muscle
3 credits Spring Semester
This course examines the theories of data collection and collection techniques used to evaluate musculo-skeletal and neuromuscular function. The application of both computerized and non-computerized collection systems for performance evaluation is covered. The course is also designed to establish a clear linkage between the acute and chronic musculo-skeletal and neuromuscular changes that occur during exercise and the laboratory methods used to assess those changes. Collection theory, musculoskeletal and neuromuscular function, methods of strength evaluation, anaerobic power testing, electromyography, and a number of other functional parameters will be discussed.
PREREQUISITE: KIN 520 (FORMALLY ESS 520).

KIN531 Laboratory Experiences in Systemic Exercise Physiology
3 credits Fall Semester
This course provides a laboratory assessment of physiological principles and theories learned in the classroom setting. Focus will be on systemic application to exercise as an acute or chronic stressor. Corequisite: ESS 521.
PREREQUISITE: COREQUISITE ESS 521

KIN532 Sports Injuries: Prevention and Treatment
3 credits Fall & Spring Semester
Prevention, diagnosis, treatment and rehabilitation of sports injuries. Anatomical and Kinesiological application to sports injuries.

KIN534 Integrative & Functional Medicine
3 credits Fall Semester
This course will discuss integrative and functional medicine and how it emerged. This course will analyze the healthcare models that include personalized care and the whole-person perspective. In this course we will discuss various factors that influence disease including diet and nutrition, stress, activity level, pharmaceuticals and environmental pollutants. Alternative approaches to treatment will also be discussed.

KIN535 Clinical Biomechanics for Sport Medicine Professionals
3 credits Fall Semester & First Summer Session
A lecture course stressing biomechanics of joints and pathomechanics of orthopedic injuries.
PREREQUISITE: ESS 245 OR ESS 488 KINESIOLOGY
KIN536 Strength and Conditioning I

3 credits  
Fall & Spring Semester

This course serves as the practical/technical foundation for major compound movements and Olympic lifts. It also provides comprehension of movement specific dynamic warm-ups, advanced stretching techniques, methods for identifying movement compensations and underlying issues as well as evaluating Olympic techniques. Due to the practical nature of the course, all the sections of this course are held in the Hecht Athletic Center (HAC).

KIN537 Strength and Conditioning II

3 credits  
Fall & Spring Semester

This course is the continuation of Strength and Conditioning I (KIN 536). It provides more advanced Olympic weightlifting techniques and ballistic training, alongside a continued focus on corrective exercises to ensure a reduced risk of injury. The course also provides an introduction to exercise programming including specialized training techniques for athletic development. Due to the practical nature of the course, all sections of this course are held in the Hecht Athletic Center (HAC).

PREREQUISITE: KIN 536

KIN538 Nutrition during the Lifecycle

3 credits  
Fall Semester

This course is designed to examine the changes in nutrition requirements during the life cycle, particularly as related to growth, development and aging. Psychosocial, cultural, and economic issues related to food intake at various life stages will be reviewed.

PREREQUISITE: AN INTRODUCTORY NUTRITION COURSE THAT INCLUDED DIGESTION, ABSORPTIONS AND TRANSPORT OF NUTRIENTS, MACRO AND MICRONUTRIENTS AND ENERGY METABOLISM IS REQUIRED.

KIN540 Exercise Psychobiology

3 credits  
Fall & Spring Semester

This course is designed primarily for graduate level Exercise and Sport science students who are interested in the biochemical basis of personality as affected by exercise and sport. The course involves interdisciplinary integration and comprehensive reviews of ancient and current literature dealing with exercise, stress, emotional, personality, immune system function and neuroendocrine function.

PREREQUISITE: KIN 521 (FORMALLY ESS 521).

KIN542 STRENGTH AND CONDITIONING

3 credits  
Fall & Spring Semester

A comprehensive overview of strength and conditioning.

PREREQUISITE: ESS245 OR KIN 345 - KINESIOLOGY (FORMALLY ESS 345).

KIN543 Professional Training and Counseling for Integrative Health

3 credits  
Fall Semester

Students will learn the integrative health care model, theories, behavior change models, approaches & techniques used in nutritional counseling to help athletes, individuals and groups implement and sustain behaviors, lifestyles, and attitudes to achieve optimal health. Lecture & personal application will allow for the development of skills in each of these areas.

PREREQUISITE: PRE-OR CO-REQUISITE NUTRITION ASSESSMENT & LAB OR PERMISSION OF INSTRUCTOR
KIN545 Special Sport Populations  
3 credits 
Spring Semester  
This course presents an in-depth examination of chronic conditions and medical problems commonly observed in athletes. Students will learn about the etiology of the medical condition, how exercise affects the condition, and the most recent therapeutic treatments prescribed for the condition.  
PREREQUISITE: KIN 521 (FORMALLY ESS 521).

KIN546 Elite Conditioning I  
3 credits 
Fall & Spring Semester  
Elite Conditioning I provides an introduction to evaluation techniques catered specifically to the athletic population including tests for strength, power, speed, agility, balance and stability. The courses also provides instruction on how to apply these evaluations to their respective sports/positions. These evaluation techniques provide data that students will use in the process of corrective exercise prescription. Students are taught how to implement corrective strategies to improve athletic performance. Due to the practical nature of the course, all sections of this course are held in the Hecht Athletic Center (HAC).

KIN547 Elite Conditioning II  
3 credits 
Fall & Spring Semester  
Elite Conditioning II is the continuation of Elite Conditioning I (KIN 546). This course provides students with an understanding of the design and implementation of periodized conditioning programs for athletes based on the testing, evaluation, and applications to specific sports learned in Elite Conditioning I. The course focuses on speed agility and quickness for sports. It also includes practical implementation of ballistic, plyometric, speed, and conditioning drills emphasizing evidence based methods and training techniques. Due to the practical nature of the course, all sections of this course are held in Hecht Athletic Center (HAC).  
PREREQUISITE: KIN 546

KIN549 Nutrition Assessment and Lab  
3 credits 
Fall Semester  
Application of the principles of normal and therapeutic nutrition, nutrition assessment, evaluation and intervention as related to sports performance and the management and treatment of disease states. Laboratories will allow for the development of skills in each of these areas.  
PREREQUISITE: STUDENTS ARE EXPECTED TO BE FAMILIAR WITH BASIC PRINCIPLES OF NUTRITION, HAVE COMPLETED BIOCHEMISTRY, DIET THERAPY, AND PSYCHOLOGY OR RECEIVE PERMISSION FROM INSTRUCTOR.

KIN550 Nutrition Biochemistry and Integrative Metabolism  
3 credits 
Fall & Spring Semester  
To learn the fundamental biochemical structure and pathways governing nutrient intake and utilization. Students will learn how major forms of nutrients (macronutrients, vitamins, minerals and trace elements) are processed and utilized by different organs with a particular emphasis on muscle metabolism. Students will also learn how to relate their newly acquired knowledge to health and disease outcomes with focus on lifestyles disease related to metabolism such as diabetes and obesity.  
PREREQUISITE: STUDENTS ARE EXPECTED TO BE FAMILIAR WITH BASIC PRINCIPLES OF NUTRITION, ANATOMY AND PHYSIOLOGY, HAVE COMPLETED BIOCHEMISTRY, OR RECEIVE PERMISSION FROM INSTRUCTOR.
KIN557 Diagnostic Imaging Techniques In Sports Medicine
3 credits  Spring Semester
This course is designed as an elective for undergraduate KIN students or graduate students. The basic physics of radiological imaging will be covered including radiology, fluoroscopy, CT scan, ultrasound, MRI, and nuclear medicine including image archiving. Normal anatomy will be compared to the corresponding radiographic anatomy. Common sports injuries will be evaluated by multiple radiographic modalities and will be correlated with the clinical condition. Discussion will include bony pathology as well as soft tissues such as ligaments, tendons, and menisci.
PREREQUISITE: ANATOMY, PHYSIOLOGY, OR PERMISSION OF INSTRUCTOR.

KIN561 Facility Management
3 credits  Fall & Spring Semester
Facility management provides students with an understanding of fitness entrepreneurship, giving students a comprehensive understanding of the, laws, regulations, policies, and work involved in setting up a fitness facility such as a gym, wellness center, or athletic training center. Students are responsible for developing a viable sports or fitness complex including all aspects of administrative and facility management.

KIN562 Fiscal Management in Sport Administration
3 credits  Fall Semester
Fiscal management as related to athletic sports administration, recreation and leisure sports administration, and physical education.
PREREQUISITE: BACKGROUND AND EXPERIENCE IN EXERCISE SCIENCE OR PERMISSION

KIN563 Facilities and Event Management
3 credits  Spring Semester
This course is designed to introduce students to principles and practices of planning, funding and managing facilities associated with sports participation including professional sport venues, college sports, parks, recreational sport and health/fitness clubs. Students will gain an understanding of promoting, marketing, and maintaining sport facilities.
PREREQUISITE: KIN 566 (FORMALLY ESS 566)

KIN564 Principles of Sport Marketing
3 credits  Fall & Spring Semester
This course will focus on the vast world of sports marketing. The basic principles of marketing and marketing management will be introduced and integrated with application of these principles to sport and sports-related organizations.
PREREQUISITE: ESS 301 OR PERMISSION OF INSTRUCTOR.

KIN565 Legal Aspects of Sports and Exercise Science
3 credits  Spring Semester
Legal liability, personal injury, negligence and other related legal aspects of sports and exercise science.
PREREQUISITE: BACKGROUND AND EXPERIENCE OR PERMISSION.

KIN566 Organization and Administration of Sports Programs
3 credits  Fall Semester
Administrative and organizational procedures and problems specific to athletic administration, recreation and leisure sports administration, and physical education.
PREREQUISITE: BACKGROUND AND EXPERIENCE IN EXERCISE SCIENCE OR PERMISSION
KIN567 Elements of Sports Psychology
1- 3 credits Fall & Spring Semester & First & Second Summer Session
Introduction to the study of sport and exercise psychology including theory, current research and practical application.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

KIN568 Developmental Sports Psychology
3 credits Offered By Announcement Only
Examination of the concept of sport psychology which includes but is not limited to performance, enhancement, student performance and academic application.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

KIN570 Advanced Programming
3 credits Fall & Spring Semester
Advance programming allows students to dissect sports by movement, metabolism and limitation. The course investigates current trends and evidenced based applications of specific training techniques for optimal sport performance. Students will perform complete sports analysis and develop periodized programs for major sports.

KIN571 Sport Industry in South Florida
3 credits Spring Semester
This course will examine the various sport based organizations/events that are part of the sport industry in South Florida. Study of these organizations/events will include (a) products/services produced, (b) organizational structure, (c) economic impact on the local community, (d) key management personnel, (e) physical facilities, and (f) internship/employment opportunities.

KIN572 Creative Approaches to Problem Solving and Conflict Management
3 credits Spring Semester
This hands-on course will examine the concepts of problem solving and conflict management from both personal and organizational perspectives. Students will have the opportunity to study in-depth both of these concepts (and the relationship between them) through a combination of lecture, theory, individual and group activities, readings, practical exercises, and self-assessment tools.

KIN573 ADVANCED SPORT GOVERNANCE
3 credits Spring Semester & Second Summer Session
This course provides the student with an examination of the governing organizations of sport at the youth, secondary, intercollegiate, professional, international, sport specific and Olympic levels. In addition, policy development in sport management will be explored.
PREREQUISITE: GRADUATE STANDING.

KIN574 Ethical Decision Making in Sports and the Professions
3 credits Fall & Spring Semester
This course will examine ethical decision-making in a variety of environments with an emphasis on sport professions. Real and hypothetical situations will be utilized, and the course will combine theory with practical application. The case method in sport ethics will be incorporated.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
KIN575 Essential Leadership in Sport and the Professions
3 credits  Fall & Spring Semester
This course will examine the concept of leadership as it pertains to sports and other professions. Various leadership and management skills will be included with a focus on practical applications in a work environment. Theory and self-assessment strategies will be incorporated.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

KIN576 Practical Approach to Motivation and Ethical Decision Making
1-3 credits  Spring Semester
A critical study of practical problems of professionals in Exercise and Sport Sciences. PREREQUISITE: BACKGROUND AND EXPERIENCE OR PERMISSION.

KIN577 Advanced Nutrition for Health and Fitness
3 credits  Fall & Spring Semester & First & Second Summer Session
This course presents an in-depth study of the nutritional concerns of today's recreational and competitive athlete. Topics include dehydration, classic carbohydrate loading, protein needs, ergogenic aids, and more. State-of-the-art research in the field is provided. This is also a writing intensive course. Thus, writing skills will represent an integral part of one's grade.
PREREQUISITE: KIN 155 AND 221 OR 521 (FORMALLY ESS 155, 221 AND 521).

KIN578 Pharmacology for Allied Health Professionals
3 credits  Spring Semester
The study of drug families and drugs in common use across spectra of age, illness, disease, and disability. Students will understand body systems treated with current pharmaceuticals over-the-counter (OTC) medications, and neutraceuticals. Actions, key adverse effects, and influences on individuals undergoing physical activity will be emphasized.
PREREQUISITE: KIN 521 (FORMALLY ESS 521).

KIN579 Principles of Exercise Prescription/Assessment: Cardiovascular
3 credits  Spring Semester
This course presents a comprehensive overview of the physical, physiological and metabolic responses of the human body to exercise testing and training both in health and disease. The successful student will gain an understanding of the process involved in prescribing safe and effective therapeutic exercise in healthy individuals as well as patients with heart and lung disease, diabetes and obesity. An overview of environmental and legal considerations in the prescriptive process will also be discussed.
PREREQUISITE: KIN 521 (FORMALLY ESS 521).

KIN580 Principles of Exercise Prescription: Neuromuscular
3 credits  Spring Semester
An examination of the scientific bases of modern training techniques designed to optimize performance, their functional application and potential impact on performance in sport and everyday activity.
PREREQUISITE: KIN 520 AND 521 OR PERMISSION OF THE INSTRUCTOR (FORMALLY ESS 520 AND 521).
KIN581 Development and Maturation of Athletes.  
3 credits  
Spring Semester  
This course is an in-depth study of pediatric exercise physiology with special emphasis on growth, maturation, physical activity, and performance. Topics include a comprehensive summary of biological growth and maturation, processes as it impacts physical performance. Additionally, students will learn the bases of pediatric exercise physiology in order to understand the concepts of motor development, strength, aerobic and anaerobic performance in the pediatric population.

KIN585 Advanced Topics in Kinesiology and Sport Sciences  
3 credits  
Spring Semester & First & Second Summer Session  
This course will provide a synthesis of essential concepts in specialty subjects relevant to one's field of interest.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

KIN586 Exercise Prescription/Assessment Laboratory  
3 credits  
Fall Semester  
This course presents an overview of the laboratory techniques used to assess cardiovascular endurance and general fitness, pulmonary function and anaerobieses observed during competition.  
PREREQUISITE: KIN 579 (FORMALLY ESS 579).

KIN587 Laboratory Experience in Sports Nutrition  
3 credits  
Spring Semester  
This laboratory class provides case study analyses and computerized nutrient analysis systems designed to evaluate nutrition and hydration needs of the recreational and competitive athlete. From urinalysis and blood work to body composition and computerized nutrient data base systems, this laboratory provides a clinical approach to evaluating the nutrition status of the exercising individual. Corequisite: ESS 577.  
PREREQUISITE: COREQUISITE: ESS 577.

KIN588 ADVANCED GROSS ANATOMY in Kinesiology and Sport Sciences  
3 credits  
Spring Semester  
Human dissection of the major muscles, arteries and nerves of the body. Course is held at the University of Miami, Medical Campus, and cadaver laboratory. Special consideration is given to injury sites in sports such as the knee, shoulder, elbow, neck and spinal areas. Students are required to pay a $100 laboratory fee for the class. This course is to be taken by undergraduate Athletic Training majors and for the 5-year Sports Medicine with a Concentration in Athletic Training program students only.  
PREREQUISITE: MUST BE ATHLETIC TRAINING MAJORS OR IN THE 5-YEAR SPORTS MEDICINE WITH A CONCENTRATION IN ATHLETIC TRAINING PROGRAM.

KIN589 Directed Readings in Kinesiology and Sport Sciences  
3 credits  
Fall & Spring Semester & First & Second Summer Session  
Directed Readings focusing on research and contemporary trends in the field.  
PREREQUISITE: PERMISSION OF CHAIRPERSON.
KIN590 Special Topics in Kinesiology and Sport Sciences
1- 3 credits  Fall & Spring Semester & First & Second Summer Session
This course is designed for students wishing to focus on a specific area of study within the umbrella of the Kinesiology and Sport Sciences curriculum. Students will be given supervision and support in a direction relevant to their needs and interests in a structured setting.
PREREQUISITE: BACKGROUND AND EXPERIENCE OR PERMISSION.

KIN599 Advanced Programming for Endurance Athletes
3 credits  Fall & Spring Semester
This course provides students with training techniques to improve aerobic capacity, endurance, and lactate threshold for optimal performance. Students will review evidenced based principles of sports nutrition, strategies to ensure proper hydration, thermoregulation, and fuel (substrate) availability during prolonged exercise as well as develop programs for competitive sports including triathlon, marathon, and cycling.

KIN602 Athletics in the United States
3 credits  Fall Semester
An Assessment of athletics in the United States. Focus on historical perspectives, contemporary issues, interface with international athletics, and future trends.
PREREQUISITE: BACKGROUND AND EXPERIENCE IN ATHLETICS OR PERMISSION OF INSTRUCTOR

KIN603 Contemporary Issues in Kinesiology and Sport Sciences
3 credits  Spring Semester
Problem identification, investigation, analysis, and problem solving approaches in Kinesiology and Sport Sciences.

KIN604 Recreation in the United States
3 credits  Offered By Announcement Only
An assessment of recreation and leisure in the United States. Focus on past, present, and future trends, problems, and issues.
PREREQUISITE: BACKGROUND AND EXPERIENCE IN RECREATION OR PERMISSION OF INSTRUCTOR

KIN610 Advanced Adolescent Growth and Maturation
3 credits  Spring Semester
This course is an in-depth study of pediatric exercise physiology with special emphasis on growth, maturation, physical activity, and performance. Topics include a comprehensive summary of biological growth and maturation, processes that impact physical performance. Additionally, students will learn the basis of training pediatric populations.

KIN612 Applied Sport Psychophysiology
3 credits  Fall Semester
The study of the physiological effects of acute vs. chronic training on homeostatic function, musculoskeletal systems, energy system function, cardiovascular system, and the pulmonary system. Students will be able to understand and interpret terminology and research literature published in the field.
PREREQUISITE: KIN 541 (FORMALLY ESS 541).

KIN615 Evidence-Based Sports Medicine
3 credits  Spring Semester
Introduction to clinical epidemiology and the evaluation of the efficacy of prevention, diagnostic, and treatment strategies or orthopedic injuries in sports medicine.
KIN 616 Advanced Rehabilitation Techniques in Sports Medicine
3 credits                              Spring Semester
This is an advanced athletic training course designed to enhance the athletic trainer's ability to plan and implement a comprehensive sports injury rehabilitation program based on the sequential events of musculoskeletal tissue healing. Discussion focuses on the development of a conceptual model for sports injury rehabilitation which incorporates rehabilitation phases, intervention goals, and progression criteria. Application of the problem-oriented approach to the management of athletic injuries is a predominant theme throughout this course.

KIN 617 Advanced Evaluation Techniques in Sports Medicine
3 credits                              Fall Semester
A lecture/lab course stressing clinical techniques involved in the use of posture evaluation, back evaluation, advanced orthopedic evaluation, and gait analysis, in conjunction with the scientific foundations of physiology and biomechanical principles associated with advanced evaluation techniques.

KIN 620 Practicum in Athletic Training
2 credits                              Fall Semester
Field experience at the athletic training setting through working with collegiate athletes to expose students to the role and function of athletic training as certified athletic training and accredited clinical instructor as well.

KIN 621 Independent Study I
1 credit                              Fall Semester
This course is an advanced study of a particular theme or topic in the athletic training field such as students' research topic, current issues of relevance to certified trainers and other professionals in the sports health care profession. Students will prepare for class discussion by reviewing assigned readings from professional journals and other pertinent sources. Class sessions will consist of lectures, laboratories, and discussion sessions.
PREREQUISITE: NONE

KIN 622 Practicum in Athletic Training 2
2 credits                              Spring Semester
Field experience at that athletic training setting through working with collegiate athletes to expose students to the role and function of athletic training as certified athletic training and accredited clinical instructor as well.

KIN 623 Independent Study 2
1 credit                              Spring Semester
This course is an advanced study of a particular theme or topic in the athletic training field such as students' research topic, current issues of relevance to certified athletic trainers and other professionals in the sports health care professions. Students will prepare for class discussion by reviewing assigned readings from professional journals and other pertinent sources. Class sessions will consist of lectures, laboratories, and discussion sessions.

KIN 624 Practicum in Athletic Training III
2 credits                              Fall & Spring Semester & First & Second Summer Session
Field experience at the athletic training setting through working with collegiate athletes to expose students to the role and function of athletic training as certified athletic training and accredited clinical instructor as well.
PREREQUISITE: COREQUISITE: KIN 625
KIN625 Independent Study III
1 credit  Fall & Spring Semester & First & Second Summer Session
This course is an advanced study of a particular theme or topic in the athletic
training field such as students' research topic, current issues of relevance to
certified athletic trainers and other professionals in the sports health care professions.
Students will prepare for class discussion by reviewing assigned readings from
professional journals and other pertinent sources. Class sessions will consist
of lectures, laboratories, and discussion sessions.
PREREQUISITE: COREQUISITE KIN 624

KIN626 Practicum in Athletic Training IV
2 credits  Spring Semester
PREREQUISITE: KIN 535 CLINICAL BIOMECHANICS FOR SPORTS MEDICINE PROFESSIONAL

KIN627 Independent Study IV
1 credit  Spring Semester
PREREQUISITE: KIN 535 CLINICAL BIOMECHANICS FOR SPORTS MEDICINE PROFESSIONAL

KIN635 Methods in Biomechanical Analysis
3 credits  Spring Semester
PREREQUISITE: KIN 535 CLINICAL BIOMECHANICS FOR SPORTS MEDICINE PROFESSIONAL

KIN640 Neurophysiology in Exercise Science
3 credits  Spring Semester
Examination of the functions of the central, peripheral, and autonomic nervous
systems in regulating exercise homeostasis and the structural and functional modifications
to the systems through training. NOTE: This course is a writing intensive course.
This means that all examinations and papers include a critical evaluation of the
student’s ability to convey information using the written word.
PREREQUISITE: KIN 520 (FORMALLY ESS 520)

KIN641 Aging: Physiological Changes and Their Implications of Training
3 credits  Spring Semester
The physiological changes that occur due to aging and their impact on fall prevention,
independence and the application of prophylactic exercise prescriptions.
PREREQUISITE: KIN 520 (FORMALLY ESS 520) OR PERMISSION OF THE INSTRUCTOR.

KIN642 Fundamentals of Cardiology
3 credits  Spring Semester
This course represents an in-depth review and evaluation of the field of cardiology.
Students must understand the etiology of coronary artery diseases, assessment techniques
in the evaluation of cardiac pathologies, the latest risk factors, and most recent
trends in treatment and rehabilitation. Phase I through Phase IV review of Cardiac
Rehabilitation will be fully examined.
PREREQUISITE: KIN 521 (FORMALLY ESS 521).

KIN643 Laboratory Experiences in Cardiac Rehabilitation
3 credits  Spring Semester
This class provides hands-on clinical experiences in preparation of patient for
testing, assessment of pre-existing medical conditions and risk factors as well
as appropriate procedures for stress testing. Student will, in addition, have the
opportunity to view Thallium stress tests, echocardiography and cardiac surgical
procedures such as angioplasty and bypass surgery.
PREREQUISITE: KIN 521 (FORMALLY ESS 521).
KIN644 Interpretation of the ECG
3 credits
First Summer Session
This class will provide information of the electrophysiology of the heart, medicines used to improve heart function, and critical examination of waveform analyses in interpreting the electrocardiogram. Prerequisite: KIN 642 (Formally ESS 642) or permission of the instructor.
PREREQUISITE: KIN 642 (FORMALLY ESS 642) OR PERMISSION OF THE INSTRUCTOR.

KIN646 Research Methods in Kinesiology and Sport Sciences
3 credits
Fall Semester
This Course reviews the approach and research methods used to evaluate quantitative research questions in the field of Kinesiology and Sport Sciences.

KIN647 Analytic Methods in Kinesiology and Sport Sciences
3 credits
Spring Semester
Methods of analyzing research data in Kinesiology and Sport Sciences. PREREQUISITE: KIN 646 (FORMALLY ESS 646) OR PERMISSION.

KIN655 Exercise Biochemistry
3 credits
Fall Semester
This course presents an in-depth examination of the biochemical basis of exercise. Topics include carbohydrate and lipid metabolism at rest and during exercise, integration of metabolism, the use of stable isotopes in the characterization of substrate kinetics, and metabolic bases of fatigue. Both the instructor and the students will incorporate current peer-reviewed research in the field.

KIN679 Optional Internship—Strength and Conditioning
1 credit
Fall & Spring Semester & First & Second Summer Session
This 1 credit internship allows students to pursue professional internships in the field of strength and conditioning/fitness entrepreneurship. Students will be provided with contact information and a number of opportunities by Dr. Biagioli, respective to their interests.

KIN681 Issues Specific to Women's Health
3 credits
Spring Semester
This course focuses upon clinical health issues relevant to women. Students will acquire a body of knowledge concerning the specific biological and physiological changes women experience from birth to maturity, and from the pre- to postmenopausal state. Women will learn significant issues related to women's health and be able to make more educated decisions regarding their health and treatment options. PREREQUISITE: KIN 521 (FORMALLY ESS 521) OR PERMISSION OF THE INSTRUCTOR.

KIN682 Psychosocial Issues in Women's Health
3 credits
Spring Semester
This course covers a broad perspective of women and their self-esteem, their femininity, and their role in family household. Attention will be paid to the historical, cultural, and anthropological development of women and their role in society. The influence of gender will explore several areas which include a) pregnancy, b) menopause, c) menstrual cycle, d) stress and career vs. family, e) depression, and f) body image.
KIN683 Sports Medicine for the Female Athlete
3 credits  Fall Semester
This course focuses upon the physiological effects of exercise on the female athlete as it relates to her performance and health. Physiological differences between male and female will be examined as it impacts the women's performance capabilities and potential. Gender specific problems regarding the exercising female will be explored.
PREREQUISITE: KIN 521 (FORMALLY ESS521).

KIN684 SCIENCE AND ETIOLOGY OF OBESITY
3 credits  Spring Semester
This course is designed to evaluate dieting, rebound effect, set point theory, brown fat, and adaptive thermogenesis, as they relate to the etiology of obesity. The course will cover a step-by-step approach in the recognition, and management of the overweight patient. The course will also examine adipocyte morphology and the health implications of being overweight and obese. Students will examine the impact of both diet and exercise on long-term weight management.

KIN690 Strength and Conditioning Internship Experience
1- 3 credits  Fall & Spring Semester & First & Second Summer Session
Practical experience not ordinarily available through coursework sequences. Placement in a variety of settings, clinics, public and private voluntary agencies and schools. Supervised by a faculty member of the department.

KIN691 Practicum in Kinesiology and Sport Sciences/Master's students
1 credit  Fall & Spring Semester & First & Second Summer Session
The course presents graduate students with the theoretical and practical tools necessary for expanding their critical thinking and argumentative skills in order to present their scientific research results in an evaluative, logical and analytical manner. The course consists of weekly presentations of related literature, results, and findings on various Master's projects.
PREREQUISITE: NONE

KIN693 Research Colloquium.
1- 3 credits  Fall & Spring Semester
This course presents graduate students with the theoretical and practical tools necessary for presenting their scientific research in an organized, logical, and analytical manner.
PREREQUISITE: KIN 646 (FORMALLY ESS 646).

KIN694 Advanced Individual Study
1- 3 credits  Fall & Spring Semester & First & Second Summer Session
The Application for Admission to Individual Study Form will be required. PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN AND FACULTY MEMBER INVOLVED.

KIN695 Graduate/Clinical Field Experience in Kinesiology and Sport Sciences
1- 9 credits  Fall & Spring Semester & First & Second Summer Session
Practical experience not ordinarily available through coursework sequences. Placement in a variety of settings, clinics, public and private voluntary agencies and schools. Supervised by a faculty member of the department.
PREREQUISITE: PERMISSION OF CHAIRPERSON
KIN696 Field Experience in Sport Administration I
1- 9 credits Fall Semester
Practical experience not ordinarily available through coursework sequences. Placement in a variety of settings, clinics, public and private voluntary agencies and schools. Supervised by a faculty member of the department.
PREREQUISITE: PERMISSION OF CHAIRPERSON.

KIN697 Field Experience In Sport Administration II
1- 3 credits Fall Semester & First Summer Session
Practical experience not ordinarily available through coursework sequences. Placement in a variety of settings, clinics, public and private voluntary agencies and schools. Supervised by a faculty member of the department.
PREREQUISITE: PERMISSION OF CHAIR

KIN698 Field Experience in Sport Administration III
1- 3 credits First & Second Summer Session
Practical experience not ordinarily available through coursework sequences. Placement in a variety of settings, clinics, public and private voluntary agencies and schools. Supervised by a faculty member of the department.
PREREQUISITE: PERMISSION OF CHAIR

KIN699 Special Project
1- 3 credits Fall & Spring Semester & First & Second Summer Session
This course represents the capstone course in a student's field and should represent a culmination of all information learned in class.
PREREQUISITE: NONE

KIN710 Master's Thesis
1- 6 credits Fall & Spring Semester & First & Second Summer Session
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

KIN720 Research in Residence
0 credit Fall & Spring Semester
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in ESS 710 (usually six credits). Credit not granted. May be regarded as full time residence.

KIN725 Continuous Registration--Master's Study
0 credit Fall & Spring Semester & First & Second Summer Session
To establish residence for non-thesis master's students who are preparing for major examinations. Credit not granted. Regarded as full time residence.

KIN730 Pre-Candidacy to Dissertation Research
1-10 credits Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor but not for less than a total of 10. Not more than 10 hours of ESS 730 may be taken in a regular semester, nor more than six in a summer session. Where a student has passed his/her (a) qualifying examinations, and (b) is engaged in an assistantship, he/she may still take the maximum allowable credit stated above.
PREREQUISITE: DOCTORAL STUDENTS ENROLLED FOR CREDIT AS DETERMINED BY ADVISOR CREDIT IS AWARDED WHEN DISSERTATION IS ACCEPTED.
KIN735 PRACTICUM
1-2 credits  Fall & Spring Semester & First & Second Summer Session
The course presents graduate students with the theoretical and practical tools necessary for expanding their critical thinking and argumentative skills in order to present their scientific research results in an evaluative, logical and analytical manner. The course consists of weekly presentations of related literature, results, and findings on various Doctoral projects.
PREREQUISITE: ESS 646. RSCH METH IN ESS. CO-REQUISITE: MUST BE TAKEN CONCURRENTLY WITH ESS 730

KIN740 Post-Candidacy Dissertation Research
1-12 credits  Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: ADMISSION TO CANDIDACY IN DOCTORAL PROGRAM. REQUIRES APPROVAL OF ADVISOR AND DEPARTMENT CHAIR.

KIN750 Research in Residence
0 credit                     Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D. Student, after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

TEACHING AND LEARNING
TAL501 Classroom Based Assessment
3 credits                                                    Fall & Spring Semester
Principles and classroom applications of educational measurement and assessment.

TAL502 Classroom Based Research
3 credits                                              Offered By Announcement Only
Application of research principles to evaluation and improvement of teacher effectiveness. Use of scientific methods in problem solving and decision making in the classroom. Student experiences in the planning, conduct, analysis and reporting of classroom research are included.

TAL503 Technology Applications in Education
3 credits                                                    Fall & Spring Semester
Technology and its role in transforming teaching and learning; core academic-curriculum literacy; and education social systems.

TAL504 Building Positive Relationships in Inclusive Secondary Schools
3 credits                                                    Fall & Spring Semester
Designed to assist general education teachers in meeting the needs of diverse secondary school students. Focus on students with disabilities, language and culture in the classroom, and developing culturally competent classroom management methods.
PREREQUISITE: TAL 101

TAL506 Issues and Strategies for ESOL
3 credits                                              Offered By Announcement Only
This course provides a comprehensive foundation in ESOL (English for Speakers of Other Languages) competencies based on Florida's mandates and TESOL standards. Theory and practice will be emphasized in the areas of applied linguistics, cross cultural communication and understanding, methods of teaching, assessment, and curriculum and material development.
PREREQUISITE: TAL 101 AND 204 OR PERMISSION OF INSTRUCTOR.
TAL508 Language Development for Linguistically and Culturally Diverse Students  
3 credits  
Fall & Spring Semester & First & Second Summer Session  
Course will provide an introduction to theories of linguistics, first and second language acquisition, as well as foundations of English learner education. Readings and lectures will serve to highlight the development of language and literacy, including challenges faced by students for whom Standard English is a second language and/or a second dialect. This course will be the first in a two-course ESOL sequence.

TAL517 Curriculum, Assessment, Teaching and Learning for Physical Science  
3 credits  
Fall & Spring Semester  
Analysis of content knowledge, pedagogy, and materials appropriate for teaching physical science in the elementary school. The course content focuses on instructional practice with an emphasis on developing teacher content knowledge in physical science, pedagogy, and student literacy in physical science.

TAL518 Curriculum, Assessment, Teaching and Learning for Number, Operations, and Algebra  
3 credits  
Fall & Spring Semester  
This course examines topics that address the mathematical ideas underlying number, operations and algebra. Related curriculum, instructional and assessment issues will be also discussed.

TAL520 Curriculum, Assessment, Teaching and Learning for Measurement and Geometry  
3 credits  
Fall & Spring Semester & First & Second Summer Session  
Topics involving measurement and geometry in the K-16 mathematics curriculum, how students learn and reason, assessment, instructional strategies.  
PREREQUISITE: GRADUATE STUDENT; ADVANCED UNDERGRADUATE WITH CONSENT OF PROFESSOR

TAL521 Curriculum, Assessment, Teaching and Learning for the Life Sciences  
3 credits  
Fall & Spring Semester  
Analysis of content knowledge, pedagogy, and materials appropriate for teaching life science in the elementary school. The course content focuses on instructional practice with an emphasis on developing teacher content knowledge in life science, pedagogy, and student literacy in life science.

TAL522 Curriculum, Assessment, Teaching and Learning in the Earth Sciences  
3 credits  
Fall & Spring Semester  
Analysis of content knowledge, pedagogy, and materials appropriate for teaching Earth science in the elementary school. The course content focuses on instructional practice with an emphasis on developing teacher content knowledge in Earth science, pedagogy, and student literacy in life science.  
PREREQUISITE: ADMISSION TO THE GRADUATE SCHOOL

TAL523 Curriculum, Assessment, Teaching and Learning for Data Analysis and Probability  
3 credits  
Fall & Spring Semester & First & Second Summer Session  
Data in the elementary school: how to gather (biased and unbiased samples), store, manage, represent, analyze. Probabilistic inferences in elementary school: chance, odds, counting, related topics.  
PREREQUISITE: GRADUATE STUDENT; ADVANCED UNDERGRADUATE WITH CONSENT OF PROFESSOR

TAL524 Education and the Arts  
3 credits  
Fall & Spring Semester  
Exploration of the fine and performing arts and their relation to PreK-12 education. Emphasis is placed on experiential learning and methods of incorporating the arts in school curricula. The course also includes a focus on the value of the arts to the individual and society.
TAL526 Practicum in Reading
3 credits  Fall & Spring Semester
Supervised practicum in reading and writing. Emphasis is on assessment and interventions for elementary students with a range of academic, linguistic and cultural challenges in becoming proficient readers.
PREREQUISITE: TAL 320, TAL 321

TAL527 Language and Assessment in ESOL
3 credits  Offered By Announcement Only
Study of language systems with a focus on understanding and applying linguistic terms. Course prepares teachers to conduct informal and formal assessment procedures with English language learners. Field experience with English language learners is required.
PREREQUISITE: TAL 531, 550 OR 620, 603, 622.

TAL528 ESOL Curriculum, Methods, and Assessment.
3 credits  Offered By Announcement Only
This course focuses on applying TESOL theories, principles, and current research to the development and use of instructional materials, curriculum, and methods. The course will enhance participant's knowledge of the regular English language arts curriculum in comparison with the ESOL curriculum.
PREREQUISITE: TAL 506.

TAL531 Educating Exceptional Students
3 credits  Fall & Spring Semester
A survey course in special education emphasizing characteristics and problems associated with various categories of exceptional learners. Policy, issues, and trends in special education will be discussed

TAL540 Instruction and Assessment in the Secondary School.
3 credits  Fall & Spring Semester
Research-based instructional processes in the secondary school.
PREREQUISITE: APPLICATION TO TEACHER CANDIDACY.

TAL541 Instruction in Secondary English.
2-3 credits  Fall Semester
Analysis of methods, materials, and content appropriate for teaching language arts in the secondary school.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

TAL542 Instruction in Secondary Mathematics.
3 credits  Offered By Announcement Only
Analysis of methods, materials, and content appropriate for teaching mathematics in the secondary school.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

TAL543 Instruction in Secondary Science.
3 credits  Offered By Announcement Only
Analysis of methods, materials, and content appropriate for teaching science in the secondary school.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
TAL544 Instruction in Secondary Social Studies.
2-3 credits Fall Semester
Analysis of methods, materials, and content appropriate for teaching the social sciences in the secondary school.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

TAL550 Language and Early Reading Instruction
3 credits Fall Semester
Factors related to emergent literacy with an emphasis on diverse aspects of language that influence literacy and learning; development of emergent literacy and word perception; emergent literacy curriculum development; appropriate assessment and instructional techniques. Understanding of reading as a process of student engagement in fluent decoding and construction of meaning. Writing intensive.

TAL551 Word Perception in Reading
3 credits Offered By Announcement Only
Administration and interpretation of a standard reading inventory. An examination of the word recognition and vocabulary curriculum as well as appropriate assessment devices and instructional techniques.

TAL552 Reading Comprehension
3 credits Spring Semester
Development of comprehension, rate, and study skills; reading in the content areas; evaluation of materials, organization of programs; issues, problems, and exceptional readers. Emphasis is placed on understanding reading as a process of student engagement in fluent decoding of words and construction of meaning.

TAL553 Mentoring and Internship in Classroom Teaching
3-6 credits Fall & Spring Semester
A comprehensive program of supervised teaching in elementary or secondary classrooms. PREREQUISITE: ONE YEAR OF TEACHING EXPERIENCE OR ATTENDANCE IN THE TEACH FOR AMERICA SUMMER INSTITUTE.

TAL554 Literacy and Learning Strategies in the Content Area
3 credits Fall & Spring Semester
Literacy instruction in content areas for grades 6 through 12; instructional methods and materials for development of language arts, reading, and study skills. Emphasis on appropriate materials, motivation, and support for students with exceptional needs and English language learners.

TAL557 Exceptional Student Education and Classroom Management
1-5 credits Fall & Spring Semester
Introduction to theories and methods of effective classroom management and learning environments, perceptions of disabilities, addressing disruptive behaviors in classrooms and behavioral assessment.

TAL558 ESOL Strategies and Classroom Management
1-5 credits Fall & Spring Semester
This course provides a general overview of foundation in ESOL (English for Speakers of Other Languages) competencies based on Florida's mandates and ESOL Standards. Theory and practice will be emphasized in the areas of applied linguistics, cross cultural communication and understanding, methods of teaching, assessment, and curriculum and material development. A Classroom Management Plan will be developed based on current issues and effective classroom strategies for diverse populations.
TAL560 The Teacher in American Society
3 credits  Fall & Spring Semester
This course focuses on the historical development of teaching in the US, contemporary educational reform and social change, issues involving teacher work, the impact of technology on schooling, ethical and legal issues in teaching, topics involving Race, Gender, Social Class and Equity. Popular Culture sources are emphasized. Course designed for graduate credit.

TAL568 Reform, Politics and Social Organizations of Schooling
3 credits  Fall & Spring Semester

TAL569 Teaching and Management for Diverse Classrooms
3 credits  Fall & Spring Semester
This course will emphasize building a classroom culture and community that meets the needs of all students, including learners with disabilities and learners with culturally and linguistically diverse backgrounds. A history of major legal requirements for diverse populations is examined, including the meaning of learning differences, definitions and causes of disabilities, language acquisition processes, and methods for teaching diverse populations. An introduction to theories and methods of effective classroom management for building learning communities is integrated throughout the course.
PREREQUISITE: CO-REQUISITE(S): GRADUATE ADMISSION TO THE EDUCATION AND SOCIAL CHANGE PROGRAM TRACK

TAL570 Associate Teaching in the Elementary School.
6-9 credits  Offered By Announcement Only
A comprehensive semester-long program in observation and supervised teaching in the elementary school. The student spends full-time in an elementary school participating in all activities of the teacher under the guidance of school and university personnel.
PREREQUISITE: ACCEPTANCE TO ASSOCIATE TEACHING.

TAL572 Associate Teaching in the Secondary School.
6-9 credits  Offered By Announcement Only
A comprehensive program in observation and supervised teaching in the secondary school. The student spends full-time in a secondary school participating in all activities of the teacher under the guidance of school and university personnel.
PREREQUISITE: ACCEPTANCE TO ASSOCIATE TEACHING.

TAL577 Human Development, Learning and Schooling
3 credits  Fall & Spring Semester
PREREQUISITE: STUDENT IN GOOD STANDING IN THE MASTERS OF SCIENCE IN EDUCATION DEGREE PROGRAM IN ADVANCED EDUCATIONAL STUDIES: EDUCATION AND SOCIAL CHANGE

TAL580 Seminar on Teaching
1-3 credits  Offered By Announcement Only
Topical seminar to accompany associate teaching

TAL584 Topics in the Professional Development and Supervision of Teachers.
3 credits  Offered By Announcement Only
Topics include the preparation of clinical teachers to induct, guide, and supervise the field experiences of students and associate teachers; techniques in the observation and supervision of in-service teachers; creation and implementation of professional development plans; reading in the research on teacher development across the career.
PREREQUISITE: TEACHING EXPERIENCE.
TAL590 Topics in Education
3 credits  
Spring Semester
Review of emerging policy, practice, empirical research and scholarly writing on important educational issues for which formal course title and syllabus have not been developed and formalized in the UM Bulletin. Allows for experimental instructional formats. Course number indicates appropriate student audience. See Course Notes for specific topic.

TAL591 Workshop in Education
1-6 credits  Offered By Announcement Only
A critical study of practical problems of teachers. Significant problems are defined, literature and research are reviewed, and individual or small group projects are required.

TAL592 Seminar in Teaching English as a Foreign Language
3 credits  Offered By Announcement Only
This course is designed to provide prospective international teachers of English as a new language with essential strategies and multiple models of teaching techniques; and the theoretical framework to apply these strategies and techniques. 
PREREQUISITE: ADMISSION TO GRADUATE PROGRAM.

TAL593 Online Teaching and Leadership
3 credits  Fall & Spring Semester
Introduction to teaching-learning process in online learning environments, including asynchronous modalities, assessment and evaluation, technology and digital copyright usage.
PREREQUISITE: TBD

TAL594 Workshop in Education
1-6 credits  Offered By Announcement Only
A critical study of practical problems of teachers. Significant problems are defined, literature and research are reviewed, and individual or small group projects are required.

TAL595 Workshop in Education
1-6 credits  Offered By Announcement Only
A critical study of practical problems of teachers. Significant problems are defined, literature and research are reviewed, and individual or small group projects are required.

TAL596 Workshop in Education
1-6 credits  Offered By Announcement Only
A critical study of practical problems of teachers. Significant problems are defined, literature and research are reviewed, and individual or small group projects are required.

TAL597 Workshop in Education
1-6 credits  Offered By Announcement Only
A critical study of practical problems of teachers. Significant problems are defined, literature and research are reviewed, and individual or small group projects are required.
TAL598 Workshop in Education
1-6 credits  Offered By Announcement Only
A critical study of practical problems of teachers. Significant problems are defined, literature and research are reviewed, and individual or small group projects are required.

TAL599 Workshop in Education
1-6 credits  Offered By Announcement Only
A critical study of practical problems of teachers. Significant problems are defined, literature and research are reviewed, and individual or small group projects are required.

TAL601 Instructional Leadership
3 credits  Offered By Announcement Only
An examination of the components of effective supervision of instruction. Leadership theories which apply to educational settings; legal rights and responsibilities of students, teachers and administrators will be covered, as well as the examination of various models of teaching.

TAL602 Effective Teaching
3 credits  Offered By Announcement Only
A study of the theory and practice of effective teaching grades K-12. Attention is given to those teaching behaviors supported by research, and emphasis placed on the development of effective teaching behaviors.
PREREQUISITE: GRADUATE STANDING.

TAL603 Teacher in American Society
3 credits  Spring Semester
An historical, philosophical, and sociological analysis of the teaching profession in American society. The role and status of teachers in American culture will be discussed. Contemporary issues such as the union movement, status assignment, rewards and incentives, and the role of the teacher as an instrument in the definition of the culture will also be covered.

TAL604 Theoretical and Psychological Bases of Teacher Education
3 credits  Fall & Spring Semester
PREREQUISITE: DOCTORAL STANDING

TAL605 Seminar in Human Resource Development
3-12 credits  Offered By Announcement Only
Contemporary topics in human resource development and technology. Rotating topics and faculty. Open only to advanced graduate students in human resource development programs pursuing the masters, specialist, or doctoral degrees. Course may be repeated for a total of twelve credits. Subtitles describing the topics to be offered will be shown in parentheses in the printed schedule, following the title.
PREREQUISITE: ADMISSION TO MASTERS, SPECIALISTS, OR DOCTORAL STUDY OR PERMISSION OF INSTRUCTOR.

TAL606 Issues and Trends in Teacher Education
3 credits  Fall & Spring Semester
PREREQUISITE: DOCTORAL STUDENT STANDING OR INSTRUCTORS APPROVAL

TAL607 professional Seminar
1-3 credits  Fall & Spring Semester
PREREQUISITE: DOCTORAL STUDENT STANDING
TAL608 Practicum in Education and Social Change
3 credits                                                    Fall & Spring Semester
This practicum course is the culminating project for the Education and Social Change
Master's Program. Participants will review the literature, design, and present
an action project within the context of a school or community setting.
PREREQUISITE: NONE

TAL609 Practicum in Reading
3 credits                                                    Fall & Spring Semester
Practicum in an educational setting. Participants will apply effective practices
in teaching Reading.
PREREQUISITE: TAL 550, 552, 651, AND 652.

TAL610 Early Childhood Curriculum Development
3 credits                                                      First Summer Session
Development of curriculum for children from birth to eight years of age. Emphasis
on application of research findings. 20 hours of field experience required.

TAL611 Issues and Trends in Early Childhood Education
3 credits                                                           Spring Semester
Current practices in early childhood education in relation to historical perspectives
and contemporary research. Analysis of issues and problems in early childhood education.

TAL614 Typical and Atypical Child Development
3 credits                                                           Spring Semester
Theories and research in the development of children from conception through eight
years of age. Factors which influence development and the relationship of typical
development to patterns of delayed and atypical development. Writing intensive
course.

TAL615 Evaluation and Assessment in Infant and Early Childhood Special
3 credits                                                    Fall Semester
Students will become familiar with a variety of formal and informal screening,
evaluation, assessment instruments, and procedures currently in use with children
birth to eight. They will learn criteria for selecting and using developmentally
and culturally appropriate instruments and become familiar with the multi-, inter-, and trans-disciplinary team approaches. Students will write formal reports and
develop an IEP and an IFSP. May require field experience.
PREREQUISITE: TAL 614, OR PERMISSION OF INSTRUCTOR

TAL616 Intervention Strategies in Infant and Early Childhood Special Education
3 credits                                                           Spring Semester
The focus of this course will be the implementation of IEPs and IFSPs through the
use of developmentally appropriate curriculum, methods, and intervention strategies
for infants, toddlers, and young children with special needs. This will include
implementation and adaptation of existing curriculum and materials for young children
to meet the special needs of this population. May require field experience. Writing
Intensive course.
PREREQUISITE: TAL 615, OR PERMISSION OF INSTRUCTOR
### TAL617 Working with Children who Exhibit Challenging Behaviors
3 credits  
Fall & Spring Semester  
Challenging behaviors in young children; influences of culture, language, ethnicity; applying Response to Intervention in Preschool settings; evidence-based classroom and behavior management strategies; planning intensive individualized interventions; applying positive behavioral support.  
PREREQUISITE: GRADUATE STATUS

### TAL620 Reading in the Elementary School
3 credits  
First Summer Session  
Extending competencies in teaching reading, including exceptional children in the regular classroom, with emphasis on applying findings from research in reading to classroom practices. 20 hours of field experience required for all students who are not currently teaching.

### TAL621 Language Arts and Culture in the Classroom
3 credits  
Spring Semester  
Extending competencies in the language arts including linguistic and cultural diversity and children with disabilities in elementary classrooms. Emphasis on research applications. 20 hours of field experience required for all students who are not currently teaching. Writing intensive course.

### TAL622 Mathematics in the Elementary School
3 credits  
Spring Semester  
Content, methods, and research appropriate for teaching mathematics in the elementary school, including exceptional children in the regular classroom. Content is defined as a pre-algebra mathematics. 20 hours of field experience required for all students who are not currently teaching. Writing intensive course.

### TAL623 Science in the Elementary School
3 credits  
First Summer Session  
Extending competencies of elementary school teachers in teaching science to children, including exceptional children in the regular classroom. Development of science programs based on research which has classroom applications. 20 hours of field experience required for all students who are not currently teaching.

### TAL624 Social Studies in the Elementary School
3 credits  
Fall Semester  
Extending competencies in teaching social studies to children, including exceptional children in the regular classroom, with an emphasis on research applications. 20 hours of field experience required for all students who are not currently teaching.

### TAL625 Literature for Children and Adolescents.
3 credits  
Fall Semester  
Study of literature for children and adolescents emphasizing multicultural literature and use of literature across the curriculum. Twenty hours of field experience required.  
PREREQUISITE: GRADUATE STANDING.

### TAL626 Instructing Students Who Have Literacy Challenges
3 credits  
Fall & Spring Semester  
Administration and interpretation of instructional assessments with instructional strategies and materials based upon scientifically based reading research for the prevention and remediation of reading difficulties.  
PREREQUISITE: TAL 550 AND 552 OR 620 AND 621.
TAL628 Seminar in Elementary Education
3-12 credits   Offered By Announcement Only
Study in special interest areas in elementary education. May be taken for up to 12 credits.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

TAL629 Language and Reading Instruction
3 credits                                                    Fall & Spring Semester
Extending competencies of K-12 school teachers in teaching reading to children, including exceptional children in the regular classroom. Emphasis on applying findings from research in reading and writing to classroom practices.
PREREQUISITE: ADMISSION TO GRADUATE STUDIES AT THE UNIVERSITY OF MIAMI.

TAL630 Learning Disabilities
3 credits                                                             Fall Semester
A comprehensive study of theoretical issues, research, diagnosis, planning, and organization of instruction for children with learning problems. Curriculum adjustment, development of programs of differential instruction, specialized methods of evaluation, and team relationships will be emphasized. This is a writing intensive course.
PREREQUISITE: TAL 531 OR EQUIVALENT.

TAL631 Theory and Instructional Practices for Exceptional Student Education
3 credits                                                           Spring Semester
Theoretical issues, research, diagnosis, planning, and organization of instruction for exceptional students. Programs of differential instruction, ongoing assessment, and team relationships will be covered.
PREREQUISITE: TAL 531 OR EQUIVALENT, OR PERMISSION OF INSTRUCTOR.

TAL632 Classroom and Behavior Management
3 credits                                                           Spring Semester
An examination of the principles of various theoretical perspectives of classroom management and discipline. Applications to the management of behavior problems of children and adolescents. Contemporary research analyzed and discussed. Writing intensive course.

TAL633 Theories and Models of Teaching Students with Behavior/Emotional Disorders
3 credits                                                           Spring Semester
Characteristics, issues, research, diagnosis, planning, and organization of instruction for children with behavior disorders. Curriculum design evaluation methods and instructional strategies are also included.
PREREQUISITE: TAL 531 OR EQUIVALENT.

TAL634 Prescriptive Teaching of Exceptional Students
3 credits                                                             Fall Semester
Techniques for individualization of instruction for exceptional students, including educational prescription, and curriculum adaptation.
PREREQUISITE: TAL 630 OR 631, 633 OR PERMISSION OF INSTRUCTOR

TAL635 Seminar in Special Education
3-12 credits   Offered By Announcement Only
Study in special interest areas in special education. May be taken for up to 12 credits.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
TAL636 Cognitive Psychology in Special Education
3 credits                                                    Fall & Spring Semester
This course will focus on the immediate and long-term effects of prenatal substance
exposure and other risk factors on the development and learning of infants and
toddlers. May require field experience. Prerequisite: Graduate standing or permission
of instructor.
PREREQUISITE: DOCTORAL STUDENT STANDING

TAL637 Assessment in Exceptional Student Education
3 credits                                                             Fall Semester
Administration and interpretation of assessment tools used to assess and evaluate
reading and learning difficulties; includes a survey of instructional strategies
and materials for the prevention and remediation of reading difficulties based
on the results of the assessments.

TAL638 Communication and Consultation Skills in Exceptional Student Education
3 credits                                                           Spring Semester
A course for professionals who will be teaching, counseling, or interacting directly
or indirectly with exceptional students. An overview of community agencies, organizations,
and services, counseling and consulting models, skills associated with various
educator roles; and techniques for interacting with parents.

TAL641 Principles of Curriculum Development and Classroom Management for TESOL
3 credits                                                           Spring Semester
Components of curriculum and instructional management in ESOL classrooms. Pupil/teacher
interaction, curriculum organization, student assessment and evaluation, materials
development and adoption, utilization of resources, and classroom organization
will be covered.

TAL642 Equity in STEM Education.
3 credits                                                             Offered By Announcement Only
Issues of unequal student achievement, course taking, degree-seeking, and careers
that rely on mathematics, science, and technology. Focus is on social-demographic
groups defined along lines of race, ethnicity, social class, gender, language,
and their interactions. Historical and social antecedents, current day policies
and practices, extant research consequences and future trends.
PREREQUISITE: GRADUATE STUDENT STATUS.

TAL643 Introduction to Theories and Practice of Teaching English to Speakers of Other
3 credits                                                      First Summer Session
Introduction to theories and practice of ESOL.

TAL645 Language Assessment
3 credits                                                    Fall Semester
Nature and methodologies of language assessment within a framework of psychometric
and linguistic criteria.
PREREQUISITE: TAL 643.

TAL646 Principles of First and Second Language Acquisition
3 credits                                                          Spring Semester
Theories and principles of language acquisition. Phenomena of language interference
related to linguistic and cultural criteria.
PREREQUISITE: TAL 643 AND/OR 640.
TAL647 Understanding Culture in the Classroom  
3 credits  
Spring Semester  
This course explores the conflicts and the strategies for resolution between the patterns of culture in the classroom and the patterns of culture that school children bring to the classroom - patterns which are learned in their families and communities.

TAL648 Educational Issues in Immigration  
3 credits  
Spring Semester  
An historical, philosophical, and sociological analysis of issues involving education and immigration, cultural identity, diversity, and congruity. A topical approach is emphasized.

TAL649 Language, Literacy and Cultural of Policy  
3 credits  
Fall & Spring Semester  
PREREQUISITE: REQUIRES DOCTORAL STANDING

TAL650 Topics in Language and Literacy Learning  
1-3 credits  
Fall & Spring Semester  
Seminar providing study of contemporary topics and professional issues in teacher education.  
PREREQUISITE: DOCTORAL STANDING AND PERMISSION OF INSTRUCTOR

TAL651 Assessment of Reading and Related Learning Disabilities  
3 credits  
Fall Semester  
Theories and procedures for screening, diagnosis, and progress-monitoring of reading and related learning disabilities. Includes instruction and supervised clinical experiences in administration and interpretation of assessments with an emphasis on prevention, identification, and remediation of reading and related learning disabilities.  
PREREQUISITE: TAL 550, 552

TAL652 Intervention for Reading and Related Learning Disabilities  
3 credits  
Spring Semester  
Theories and procedures for screening, diagnosis, and progress-monitoring of reading and related learning disabilities. Includes instruction and supervised clinical experiences in administration and interpretation of assessments with an emphasis on prevention, identification, and intervention of reading and related learning disabilities.  
PREREQUISITE: TAL 651 (OR COULD BE TAKEN CONCURRENTLY).

TAL653 Applied Linguistics in Education  
3 credits  
Fall & Spring Semester  
Survey of phonology, morphology, and syntax of language system, especially as they apply to learning disabilities, common language disorders, programs in preschool, reading, and bilingual education.  
PREREQUISITE: DOCTORAL STANDING OR INSTRUCTOR'S APPROVAL
TAL655 Seminar in Reading/Learning Disabilities
3-12 credits   Offered By Announcement Only
Contemporary topics in reading and learning disabilities. Rotating topics and faculty. Open only to advanced graduate students in reading and learning disabilities pursuing specialist or doctoral degrees. Specialist students enroll for a total of six hours, and doctoral students for a total of 12 hours. Course may be repeated for a total of 12 credits. Subtitles describing the topics to be offered will be shown in parentheses in the printed schedule, following the title.
PREREQUISITE: ADMISSION TO SPECIALIST OR DOCTORAL STUDY OR PERMISSION OF INSTRUCTOR.

TAL656 Seminar in Reading
3 credits                                                    Fall & Spring Semester
Seminar providing intensive study of contemporary topics in reading. Open to advanced graduate students in reading.
PREREQUISITE: TAL 550/552

TAL657 Theory and Research in Reading
3 credits                                                    Fall & Spring Semester
Provides an overview of the historical roots and current state of the learning sciences, as they apply to the study of learning in science and mathematics. Organized around reading, discussion and synthesis of research. Prerequisite: Acceptance to Ph.D. program or approval of instructor.
PREREQUISITE: DOCTORAL STANDING

TAL658 Theory and Research in Writing
3 credits                                                    Fall & Spring Semester
Study of mathematics and science curricula and the competing forces that shape them, including standards documents, state and national policy, conceptions of the disciplines, modern and postmodern analyses of curriculum theory. Prerequisite: Admission to graduate studies.
PREREQUISITE: REQUIRES DOCTORAL STANDING

TAL660 Theories and Analyses of Instruction
3 credits                                                    Offered By Announcement Only
A survey of current instructional theories with; a consideration of the relationship to what is known about learning and a selection, examination, and discussion of the techniques derived from them.
PREREQUISITE: EPS 605 (OR EQUIVALENT) OR PERMISSION OF INSTRUCTOR

TAL661 The Social and Cultural Foundation of Education
3 credits                                                    Fall & Spring Semester
Doctoral seminar on the philosophical, theoretical, and psychological bases of teacher education pertaining to the student's area of concentration (TESOL, Special Education or Reading). Subtitles describing the topics to be offered will be provided in the printed schedule.
PREREQUISITE: DOCTORAL STUDENT STANDING OR INSTRUCTORS APPROVAL. FULFILL THE SOCIAL FOUNDATIONS REQUIREMENT FOR DOCTORAL STUDENTS.

TAL662 Issues and Trends in Multicultural Education
3- 6 credits   Offered By Announcement Only
The study and critical examination of the theory and practice of multicultural education. Development of a personal theory of effective education for pluralism is included.
PREREQUISITE: DOCTORAL STATUS.
TAL663 Disability and Diversity: Critical Views
3 credits  Fall & Spring Semester
Seminar providing study of contemporary topics in teacher education. Consideration is given to the philosophical, psychological, and sociological bases of teacher education. Analytic review of research on teacher education curricula, program innovations, policy issues, and their effects will also be covered. Open only to doctoral students.
PREREQUISITE: DOCTORAL STUDENT STANDING. HAVING TAKEN ONE OF TAL 636, 668 OR 662

TAL664 Curriculum and Computing
3 credits  Offered By Announcement Only
Curriculum history and theory in the context of educational technologies from the spoken work, to text and textbook, and finally computing.
PREREQUISITE: DOCTORAL STATUS.

TAL665 Seminar in Special Education Research
3 credits  Offered By Announcement Only
Critical analysis of empirical research studies in selected areas of special education research, focusing on research designs, data analysis methods, and interpretation of findings.

TAL666 Research in Special Education
3 credits  Fall & Spring Semester
PREREQUISITE: ADMISSION TO PH.D. PROGRAM

TAL667 Seminar in Current Special Education Issues
3 credits  Offered By Announcement Only
Critical examination of selected current issues in special education from historical, social, policy, practice and research perspectives.

TAL668 Current Issues in Special Education
3 credits  Fall & Spring Semester
PREREQUISITE: DOCTORAL STUDENT STANDING

TAL669 Topics in Special Education
1-3 credits  Fall & Spring Semester
PREREQUISITE: DOCTORAL STUDENT STANDING AND PERMISSION OF INSTRUCTOR

TAL674 Internship in the Elementary School
3-6 credits  Offered By Announcement Only
A comprehensive program of supervised teaching in a K-6 classroom in the elementary school. The student spends a full semester employed as a full-time teacher while under the guidance of school and university personnel.
PREREQUISITE: APPROVAL OF THE OFFICE OF STUDENT SERVICES.

TAL675 Internship in the Secondary School
3-6 credits  Offered By Announcement Only
A comprehensive program of supervised teaching in the secondary school. The student spends two full semesters employed as a full-time teacher while under the guidance of school and university personnel.
PREREQUISITE: APPROVAL OF THE COMMITTEE ON FIELD EXPERIENCES.
TAL676 Internship in Special Education Settings
3- 6 credits   Offered By Announcement Only
A comprehensive program of supervised teaching in special education settings. The student spends two full semesters employed as a full-time teacher while under the guidance of school and university personnel.
PREREQUISITE: APPROVAL OF THE COMMITTEE ON FIELD EXPERIENCES.

TAL677 Practicum/Internship with Infants and Toddlers with Disabilities (0-3 yrs.)
1- 6 credits   Offered By Announcement Only
A comprehensive program in observations and supervised teaching in a school/center for infants and toddlers with disabilities (0-3 yrs.). The student spends full time in the school/center participating in all activities of the teacher under the guidance of school and university personnel.
PREREQUISITE: APPROVAL OF THE OFFICE OF STUDENT SERVICES.

TAL678 Practicum/Internship with Children with Disabilities (3-5 yrs.)
1- 6 credits   Offered By Announcement Only
A comprehensive program in observation and supervised teaching in a school/center for children with disabilities (3-5 yrs.). The student spends full time in the school/center participating in all activities of the teacher under the guidance of school and university personnel.
PREREQUISITE: APPROVAL OF THE OFFICE OF STUDENT SERVICES.

TAL679 Specialized Placements in Exceptional Student Education
1- 6 credits   Offered By Announcement Only
An alternative internship placement with specialists in non-classroom based and/or non-education based exceptional student education settings. The student spends full time in the program participating in all activities of the specialist under the guidance of program and university personnel.
PREREQUISITE: APPROVAL OF THE OFFICE OF STUDENT SERVICES.

TAL680 Working with Families of Young Children with Disabilities: Strategies and
3 credits                                              Fall Semester
This course will address issues related to working with families of young children with special educational and health needs. This will include strategies for effective communication and collaboration with all members of the interdisciplinary team. This is a writing intensive course.

TAL681 Methods for Communications and Language in Young Children with Disabilities
3 credits                                              Spring Semester
This course will focus on language theories, models, and methods for birth through eight-year olds. The course will present an overview of normal development in communication and discuss conditions that might impede progress as well as signs that would suggest a problem is present. This course may require field experience.

TAL682 Adaptive Technology and Computers in Early Childhood
1 credit                                               First Summer Session
Applications of adaptive technology and computers in the education of young children with special needs.
TAL683 Teaching and Teacher Education in Mathematics and Science  
3 credits  
Fall & Spring Semester  
3 cr. The focus of this course is on assessment and intervention strategies for young handicapped children. Presented will be specific assessment and intervention methods and strategies across the cognitive and effective domains. May require field experience.  
PREREQUISITE: ADMISSION TO PH.D. PROGRAM OR INSTRUCTOR APPROVAL

TAL684 Research on Learning in Mathematics and Science  
3 credits  
Fall & Spring Semester  
Interdisciplinary considerations in assessment and management of developmental disabilities in young handicapped children. Focus on impact of medicine, OT/PT psychology, social work, nutrition, and other disciplines on educational programming in early childhood special education. Prerequisite: Graduate standing; permission of instructor.  
PREREQUISITE: ADMISSION TO PH.D. PROGRAM OR INSTRUCTORS APPROVAL

TAL685 Mathematics and Science Curriculum  
3 credits  
Fall & Spring Semester  
This course will address health issues ranging from preventive health considerations to the management of medically complex children in early intervention settings.  
PREREQUISITE: ADMISSION TO PH.D. PROGRAM OR INSTRUCTORS APPROVAL

TAL686 Assessment in Mathematics and Science  
3 credits  
Fall & Spring Semester  
Holistic view of the motor development in infants and toddlers.  
PREREQUISITE: ADMISSION TO PH.D. PROGRAM OR INSTRUCTORS APPROVAL

TAL687 Mathematics and Science Education Research Practicum  
3 credits  
Fall & Spring Semester  
Overview of curriculum, teaching, care giving, and a developmentally appropriate environment for birth to two. Emphasis on matching caregiver strategies and child development. Observation required. Prerequisite: Graduate standing.  
PREREQUISITE: DOCTORAL STUDENT IN MATHEMATICS AND SCIENCE EDUCATION, COMPLETION OF AT LEAST 2 MATH/SCIENCE EDUCATION CORE DOCTORAL COURSES OR CONSENT OF INSTRUCTOR

TAL688 Topics in Math and Science Education  
1-3 credits  
Fall & Spring Semester  
This special two-day workshop will cover issues regarding the family, community, values, and culture of preschool handicapped youngsters from different cultural and ethnic groups. Special emphasis on how teachers can respond appropriately to youngsters from varying backgrounds will be emphasized. How cultural and ethnic diversity influences the following areas will be presented: assessment, parent-professional partnership, delivering interventions, curricula development, and social/affective skills.  
PREREQUISITE: ADMISSION TO PH.D. PROGRAM OR INSTRUCTOR APPROVAL

TAL690 Advance Topics in Education  
1-3 credits  
Spring Semester  
Review of emerging policy, practice, empirical research and scholarly writing on important educational issues for which formal course title and syllabus have not been developed and formalized in the UM Bulletin. Allows for experimental instructional formats. Course number indicates appropriate student audience. See Course Notes for specific topic.
TAL693 Advanced Individual Study
1-3 credits Fall & Spring Semester & First & Second Summer Session
Individual work on a special project under faculty guidance. Application for Admission to Advanced Individual Study form will be required.
PREREQUISITE: PERMISSION OF THE DIRECTING FACULTY MEMBER AND DEPARTMENT CHAIRMAN.

TAL694 Advanced Individual Study
1-3 credits Fall & Spring Semester & First & Second Summer Session
Individual work on a special project under faculty guidance. Application for Admission to Advanced Individual Study form will be required.
PREREQUISITE: PERMISSION OF THE DIRECTING FACULTY MEMBER AND DEPARTMENT CHAIRMAN.

TAL696 Practicum/Internship: Elementary Exceptional Student Education Classroom
1-6 credits Fall & Spring Semester
A comprehensive program of observations and supervised teaching in an elementary exceptional student education classroom. The student spends full time in the classroom participating in all activities of the teacher under the guidance of school and university personnel.
PREREQUISITE: APPROVAL OF THE OFFICE OF STUDENT SERVICES.

TAL697 Practicum/Internship: Secondary Exceptional Student Education Classroom
1-6 credits Fall & Spring Semester
A comprehensive program of observations and supervised teaching in a secondary exceptional student education classroom. The student spends full time in the classroom participating in all activities of the teacher under the guidance of school and university personnel.
PREREQUISITE: APPROVAL OF THE OFFICE OF STUDENT SERVICES.

TAL710 Master's Thesis
1-6 credits Fall & Spring Semester
The student working on his/her masters or Ed.D. thesis enrolls for credit. In most departments no to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.
PREREQUISITE: GRADUATE STANDING.

TAL715 Post-Candidacy Thesis Research
1-12 credits Offered By Announcement Only
Masters-degree and Ed.D. students enrolled for credit as determined by advisor. Credit awarded when thesis is accepted.
PREREQUISITE: ADMISSION TO CANDIDACY IN EITHER MASTER'S DEGREE OR ED.S.PROGRAM. REQUIRES APPROVAL OF ADVISOR AND DEPARTMENT CHAIR.

TAL720 Research in Residence - Masters
0 credit Offered By Announcement Only
Masters-degree and Ed.D. students enrolled for credit as determined by advisor. Credit awarded when thesis is accepted.
PREREQUISITE: GRADUATE STANDING

TAL725 Continuous Registration - Master's Study.
0 credit Fall & Spring Semester
To establish residence for non-thesis master's study who are preparing for major examinations or working on culminating project. Credit not granted. Regarded as full time residence.
PREREQUISITE: GRADUATE STANDING.
TAL730 Pre-Candidacy to Dissertation Research.
1-12 credits  Fall & Spring Semester
Doctoral students enrolled for credit as determined by advisor. Credit is awarded when dissertation is accepted.
PREREQUISITE: ADMISSION TO DOCTORAL PROGRAM. REQUIRES APPROVAL OF ADVISOR AND DEPARTMENT CHAIR.

TAL735 Doctor of Education Dissertation
1-12 credits  Offered By Announcement Only
Required of all candidates for the Ed.D. The student enrolls for credit as determined by his/her advisor. Credit is not awarded until the doctoral project has been accepted. Total enrollment may not exceed 12 credits.
PREREQUISITE: ADMISSION TO DOCTORAL PROGRAM.

TAL740 Post-Candidacy Dissertation Research.
1-12 credits  Fall & Spring Semester
Doctoral students enrolled for credit as determined by advisor. Credit is awarded when dissertation is accepted.
PREREQUISITE: ADMISSION TO CANDIDACY IN DOCTORAL PROGRAM. REQUIRES APPROVAL OF ADVISOR AND DEPARTMENT CHAIR.

TAL750 Research in Residence
0 credit  Fall & Spring Semester & First & Second Summer Session
Doctoral students enrolled for credit as determined by advisor. Credit awarded when dissertation is accepted.
PREREQUISITE: ADMISSION TO CANDIDACY IN DOCTORAL PROGRAM. FULFILLMENT OF OTHER RESEARCH REQUIREMENTS. REQUIRES APPROVAL OF ADVISOR AND DEPARTMENT CHAIR.
BME501 Unified Medical Sciences I  
3 credits  
Fall Semester  
Treatment of the basic biological and medical elements in physiological systems.  
The anatomy, physiology, biophysics, biochemistry and certain aspects of clinical  
medicine are unified with an emphasis on cellular and sub cellular systems. Not  
open to BME undergraduates.  
PREREQUISITE: PERMISSION OF COURSE COORDINATOR.

BME502 Unified Medical Sciences II  
3 credits  
Fall Semester  
Treatment of the basic biological and medical elements in physiological systems.  
The anatomy, physiology, biophysics, biochemistry, and certain aspects of clinical  
medicine are unified with an emphasis on cardiovascular, renal, digestive, endocrine,  
and reproductive systems. Not open to BME undergraduates.  
PREREQUISITE: PERMISSION OF COURSE COORDINATOR.

BME503 Unified Medical Science III  
3 credits  
Spring Semester  
Treatment of the basic biological and medical elements in physiological systems.  
The anatomy, physiology, biophysics, biochemistry, and certain aspects of clinical  
medicine are unified with an emphasis on neural, sensory, and muscular systems.  
Not open to BME undergraduates.  
PREREQUISITE: PERMISSION OF COURSE COORDINATOR.

BME506 Computer Aided Design in Biomedical Engineering  
1 credit  
Spring Semester  
Laboratory course for computer based two and three dimensional drawing and design  
based on ProEngineer. Parametric design, parts, features, assemblies for complex  
modeling. Applications in biomedical engineering design.  
PREREQUISITE: BME 112, EEN 118

BME507 LabView Applications for Biomedical Engineering  
1 credit  
Spring Semester  
Laboratory course for computer based instrumentation and design based on Labview.  
Virtual instrumentation, data acquisition and display, GPIB instrument control,  
biomedical applications in biosignal recording, and monitoring are discussed.  
PREREQUISITE: BME 112, EEN 118.

BME512 Regulatory Control of Biomedical Devices  
3 credits  
Spring Semester  
Regulatory agencies and requirements, Food and Drug Administration, 510(k) and  
premarket approval (PMA), international regulatory requirements, ISO 9000 series,  
CE, UL, product and process validation, quality engineering, quality improvement  
programs, rapid prototyping, packaging and sterilization, and project management  
are discussed.
BME520 Medical Imaging Systems  
3 credits  Fall Semester 
Engineering and scientific principles of medical imaging systems. The concepts of instrumentation and diagnostic applications of different techniques and systems are presented. Demonstrations or exhibitions of medical systems are given in the visits to clinic and research laboratories. Topics include digital image and image processing fundamentals, radiographic (X-ray, CT), magnetic resonance (MRI) and radio-isotopic (PET) systems, and associated image reconstruction techniques. Basic concepts and simulation of imaging systems are emphasized. 
PREREQUISITE: EEN 118, 201; CO-REQUISITE 470 OR EQUIVALENT 

BME521 Medical Imaging Applications  
3 credits  Offered By Announcement Only 
Medical applications of imaging systems and image processing techniques. Topics include image fundamentals (resolution, format, and storage), image processing fundamentals (transformation, compression, enhancement, segmentation, registration, and reconstruction), and image analysis fundamentals (calibration, quantification, correlation, linearity and depiction). Course includes dedicated computer laboratory projects and demonstrations given in clinical and research laboratories at the medical campus. Co-requisite: BME 570 or equivalent. 
PREREQUISITE: EEN 118, 201; COREQUISITE: BME 470 OR EQUIVALENT. 

BME522 Scanning Electron Microscopy in Biomedical Devices  
3 credits  Fall & Spring Semester 
Physics and operating principles of scanning electron microscope (SEM), transmission electron microscope (TEM), and optical light microscope. Biological tissue preparation, storage, fixation and digital image storage. Each student will learn to use the SEM in the design and/or analysis of a biomedical device. 
PREREQUISITE: PERMISSION OF INSTRUCTOR 

BME525 Special Problems  
1- 3 credits  Fall & Spring Semester & First & Second Summer Session 
Research and/or design projects consisting of an individual investigation of current problems. Offered by special arrangement only. 
PREREQUISITE: SENIOR OR GRADUATE STANDING, PERMISSION OF INSTRUCTOR 

BME526 Special Problems  
1- 3 credits  Fall & Spring Semester 
Research and/or design projects consisting of an individual investigation of current problems. Offered by special arrangement only. 
PREREQUISITE: PERMISSION OF THE INSTRUCTOR 

BME529 Special Problems  
1- 3 credits  Fall & Spring Semester & First & Second Summer Session 
Research and/or design projects. Individual investigation of current problems. Offered by special arrangement only. 
PREREQUISITE: PERMISSION OF THE INSTRUCTOR
BME531 Technical Entrepreneurship I
1 credit  Fall & Spring Semester
The first half of a two-semester sequence that simulates the work of a product
development team to gain experience in technical entrepreneurship. The students
propose product ideas, assess those collectively, select a few, form teams, define
the product, and perform market analysis. The course is concluded with a business
and technical development plan for the team's project. Lectures are presented on
a variety of entrepreneurial topics.
PREREQUISITE: JUNIOR OR HIGHER STANDING.

BME532 Technical Entrepreneurship II
2 credits  Fall & Spring Semester
The second half of a two-semester sequence that simulates the work of a product
development team to gain experience in technical entrepreneurship. The students
complete the development of a working prototype and refine their marketing and
business plan based on experience gained during the development phase. Lectures
are presented on relevant entrepreneurial topics.
PREREQUISITE: JUNIOR OR HIGHER STANDING.

BME535 Advanced Biomaterials
3 credits  Offered By Announcement Only
Applications of biomaterials in different tissue and organ systems. Relationship
between physical and chemical structure of materials and biological system response
are discussed as well as choosing, fabricating, and modifying materials for specific
biomedical applications.
PREREQUISITE: BME 335 OR PERMISSION OF INSTRUCTOR.

BME540 Microcomputer-Based Medical Instrumentation
3 credits  Offered By Announcement Only
Principles and design of microcomputer-based biomedical instruments, analog and
digital signal conversion, microcomputer hardware and software design, algorithm
development for medical applications, medical signal processing with microcomputers,
software safety in life support systems, and current applications are discussed.
PREREQUISITE: EEN 304 AND 315, OR PERMISSION OF INSTRUCTOR.

BME541 Medical Electronic Systems Laboratory
2 credits  Spring Semester
Laboratory course for BME 540. Design of medical instruments integrated with microcomputers
PREREQUISITE: COREQUISITE: BME 540.

BME545 Biomedical Optical Instruments
3 credits  Fall Semester
Introduction to geometrical optics, light sources, detectors, and fiber optics
with an emphasis on engineering aspects and medical applications. Fiber-optic delivery
systems for medical applications, optics of the eye and visual instruments, and
optical instruments used in medicine (microscopes, endoscopes, and ophthalmic
instruments) are discussed. Hands-on sessions in the laboratory are included.
PREREQUISITE: PHY 207, MTH 311 OR PERMISSION OF THE INSTRUCTOR.
BME546 Medical Applications of Lasers
3 credits
Spring Semester
Review of geometrical optics, fiber optics, wave optics, laser physics, and technology. Medical laser systems, optical properties of tissue, light propagation in tissue, laser-tissue interactions, and surgical applications of lasers are also covered. Hands-on sessions in the laboratory are included.
PREREQUISITE: PHY 207, MTH 311 OR PERMISSION OF THE INSTRUCTOR.

BME550 Rehabilitation Engineering
3 credits
Fall Semester
Principles of rehabilitation engineering with emphasis on currently used assistive devices for ambulation and hand motion. Human neural and muscle physiology, electromyography, functional electrical stimulation, artificial and biological sensors, control, and design aspects of active assistive devices for the handicapped are discussed.
PREREQUISITE: EEN 305 OR PERMISSION OF INSTRUCTOR.

BME555 Fundamentals of Computational Neuroscience
3 credits
Spring Semester
Major concepts include neural signaling and communication from the single neuron to system of neural ensembles and the role of neural computation in engineering applications. Theory and principles of information processing in the brain are presented. Experimental data and computer simulations are used to provide real examples for students experimentation.
PREREQUISITE: BME 265 OR PERMISSION. COREQUISITE BME 470

BME565 Principles of Cellular and Tissue Engineering
3 credits
Fall Semester
Introduction to cellular and tissue engineering. Current therapeutic approaches for lost/damaged tissue or organ function, tissue engineering strategies to replace/repair tissue or function: infusion of cells, production and delivery of tissue-inducing substances, cells placed on or within biomaterial scaffolds, examples of tissue engineering applications: skin, heart muscle, blood vessels, and blood.
PREREQUISITE: BIL 150, BME 335 OR PERMISSION OF INSTRUCTOR.

BME566 Cell and Tissue Engineering Laboratory
1 credit
Fall Semester
PREREQUISITE: CO-REQ: BME 565

BME570 Biomedical Signal Processing
3 credits
Spring Semester
Course topics include quantitative description, analysis, and processing of biophysical and physiological (cardiovascular, neural, sensory, muscular, respiratory and other) signals using computers. Survey of time-frequency representations, correlation, convolution, coherence, filtering, averaging, and classification is also included.
PREREQUISITE: EEN 118, 470

BME571 Introduction to Biosignal Processing Lab
1 credit
Fall & Spring Semester
Laboratory course in conjunction with BME 570 course. Corequisite: BME 570.
PREREQUISITE: COREQUISITE BME 570.
BME575 Biomechanics II
3 credits
Offered By Announcement Only
Applications of linear and nonlinear viscoelastic concepts to the biomedical characteristics of biological tissues and structures at small and large deformations of blood flow, experimental methods of analysis, artificial organs, and life-support systems.
PREREQUISITE: BME 375.

BME581 Radiation Biology and Physics
3 credits
Fall Semester
The principles, methods, and results of radiation biology with physics applications in radiation therapy will be introduced in the course. The course will focus on mechanisms of radiation and biological system interaction, biological aspects of the foundation of radiation therapy, and mathematical models for radiobiological analysis. Corequisite or prerequisite: BME 502 or permission of instructor.
PREREQUISITE: PREREQUISITE OR COREQUISITE: BME 502 OR PERMISSION OF THE INSTRUCTOR.

BME582 Radiation Dosimetry
3 credits
Spring Semester
The principles and instrumentation of radiation dosimetry with focus on the applications in radiation therapy will be introduced in this course. The course will emphasize radiation dose computation algorithms and applications in treatment dose planning. The course will also cover a categorized dosimetric analysis of radiation therapy to different clinical conditions.
PREREQUISITE: BME 310, 581.

BME587 Finite Element Analysis for Engineers
3 credits
Fall & Spring Semester
Introduction to the finite-element method. Hands-on applications of FEMLAB software to the analysis of structural, thermal, chemical, electro-magnetic, optical, and fluid flow problems.
PREREQUISITE: MTH311 OR PERMISSION OF INSTRUCTOR

BME595 Graduate Research in Biomedical Engineering.
1-3 credits
Fall & Spring Semester & First & Second Summer Session
Research and design projects consisting of an individual investigation of current problems. Subject and credit to be arranged with the instructor.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BME599 Cooperative Education.
1 credit
Offered By Announcement Only
Practical application of classroom theory through alternating semester or summer employment with firms offering positions consistent with the student’s field of study. Course may be repeated. Periodic reports and conferences are required.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

BME605 Master’s Design Project I
3 credits
Fall & Spring Semester & First & Second Summer Session
Comprehensive M.S. design project in biomedical engineering. Open to students in the BS/MS and MS programs.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
BME606 Master's Design Project II  
3 credits          Fall & Spring Semester & First & Second Summer Session  
Comprehensive M.S. design project in biomedical engineering. Open to students in the BS/MS.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BME613 Application of Computers in Medicine  
3 credits                                              Offered By Announcement Only  
Applications in the clinical and medical research laboratories for physiological data acquisition, analysis, and management of patient records. Differences among computer systems and languages for clinical and research activities are also covered.  
PREREQUISITE: KNOWLEDGE OF PROGRAMMING AND PERMISSION OF INSTRUCTOR.

BME623 Neural Engineering  
3 credits                                                    Fall & Spring Semester  
Biophysics of neural communication, quantitative electroencephalography and evoked potentials, sleep, seizure, anesthesia and intraoperative monitoring, neural stimulation, artificial and biological neural networks, cochlear and visual implants, brain and muscle stimulation.  
PREREQUISITE: BME 503, 570 OR CONSENT OF INSTRUCTOR.

BME625 Special Problems  
1- 3 credits     Fall & Spring Semester & First & Second Summer Session  
Research and/or design projects through an individual investigation of current problems. Offered by special arrangement only.  
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

BME626 Special Problems  
1- 3 credits     Fall & Spring Semester  
Research and/or design projects through an individual investigation of current problems. Offered by special arrangement only.  
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

BME628 Advanced Topics  
1- 3 credits     Fall & Spring Semester  
Subject matter offerings based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title "Advanced Topics".  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BME629 Advanced Medical Imaging  
3 credits                                              Offered By Announcement Only  
Analysis of contemporary medical imaging systems and the associated technologies. The course focuses on principles of advanced medical imaging systems. Topics include multimodality imaging, three-dimensional image reconstruction and visualization, clinical and research applications, and derivation and comparison of algorithms.  
PREREQUISITE: BME 520 OR EQUIVALENT.

BME631 Advanced Topics  
1- 3 credits     Fall & Spring Semester  
Subject matter offerings based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title "Advanced Topics."  
PREREQUISITE: PERMISSION OF INSTRUCTOR.
BME632 Advanced Topics
1- 3 credits    Fall & Spring Semester
Subject matter offerings based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title "Advanced Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BME640 Implantable Biomedical Devices
3 credits                                              Offered By Announcement Only
Development and advances in implantable materials and devices especially those used as electrically driven prostheses. Topics include pacemakers, defibrillators, catheters, neurological stimulators, heart assist, bone repair, and other diagnostic and therapeutic devices. The historical, medical significance, business, economic, and technical aspects of these devices and the associated instruments for monitoring are discussed. Fundamentals of electrochemical corrosion and stimulation as well the technology of implantable power sources are reviewed.
PREREQUISITE: PREREQUISITE OR COREQUISITE: BME 502 OR 503.

BME645 Biomedical Optical Imaging and Diagnostics
3 credits                                              Offered By Announcement Only
Review of geometrical optics, fiber optics, and tissue optics. Introduction to physical optics: interference, diffraction, and polarization; optical imaging resolution limits, super-resolution imaging, advanced optical microscopy, and optical coherence tomography (OCT). Imaging through scattering tissue, imaging and diagnostics with polarized light, fluorescence, infrared, and Raman spectroscopy and applications are also discussed. Optical diagnostics using scattered light: laser Doppler flowmetry, and dynamic light scattering; and opto-chemical and evanescent wave sensors are also covered.
PREREQUISITE: BME 545 OR 546, AND PERMISSION OF THE INSTRUCTOR.

BME650 Advanced Biomedical Transport Phenomena
3 credits                                              Offered By Announcement Only
Continuum mixture theory and applications to mass transport in biological tissues, hydrogels, and other porous media. Mechano-electrochemical coupling phenomena in biological tissues and cells.
PREREQUISITE: BME 450 OR PERMISSION OF INSTRUCTOR

BME660 Fundamentals of Cellular and Tissue Engineering
3 credits                                              Spring Semester
Principles and advanced topics on cellular and tissue engineering. Topics include biodegradable and non-biodegradable biomaterials, cytokines, the traditional and stem cell-based tissue engineering approaches, bioreactors and special topics such as bone, cartilage and other tissues.
PREREQUISITE: BME 501 OR PERMISSION OF INSTRUCTOR

BME680 Biomedical Engineering Seminar
0 credit                                              Fall & Spring Semester
Presentation of biweekly seminars by selected speakers and graduate students on current topics of interest in biomedical engineering. Attendance is required of all graduate students registered in biomedical engineering graduate programs.
PREREQUISITE: GRADUATE STANDING.
BME681 Radiation Therapy Physics

3 credits  Fall & Spring Semester

Application of radiation physics in the field of radiation therapy. The course will cover the relevant subjects of modern physics, the basic modalities and basic instrumentations of radiation therapy, the principles of particle transport and radiation dose computation and quality assurance of radiation therapy instruments. The subject of radiation protection will also be discussed.

PREREQUISITE: BME 581.

BME683 Radiation Therapy Physics Clinical Rotation

3 credits  Fall & Spring Semester

Students will observe clinical activities at a designated radiation therapy center for ten hours per week. Rotation includes observation of daily treatment, simulation; dose planning, physics quality assurance and routine physics support activities (special physics consultation, weekly physics chart check, monitoring radiation safety activities, support of brachytherapy procedures). Students will meet with the course instructor one and a half hours/week to discuss the schedule and the progress of the rotation activities. Students need to submit reports on each radiation therapy category.

PREREQUISITE: BME 681 OR PERMISSION OF INSTRUCTOR.

BME710 Master's Thesis

1-6 credits  Fall & Spring Semester & First & Second Summer Session

The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

BME720 Research in Residence

0 credit  Fall & Spring Semester & First & Second Summer Session

Used to establish research in residence for the thesis for the master's degree and after the student has enrolled for the permissible cumulative total in BME 710 (usually six credits). Credit not granted. May be regarded as full time residence.

BME725 Continuous Registration--Master's Study

0 credit  Fall & Spring Semester & First & Second Summer Session

To establish residence for non-thesis master's students who are preparing for major examinations. Credit not granted. Regarded as full time residence.

BME730 Pre-candidacy Doctoral Dissertation

1-12 credits  Fall & Spring Semester & First & Second Summer Session

Doctoral dissertation credits taken prior to Ph.D. student's candidacy. The student will enroll for credit as determined by his/her advisor. Not more than 12 hours of BME 730 may be taken in a regular semester, nor more than six in a summer session.

BME740 Post-Candidacy Doctoral Dissertation

1-12 credits  Fall & Spring Semester & First & Second Summer Session

Doctoral dissertation credits taken after Ph.D. student have been admitted to candidacy. The student will enroll for credit as determined by his/her advisor. Not more than 12 credits in BME 740 may be taken in a regular semester, nor more than six credits in a summer session.

PREREQUISITE: ADMISSION TO CANDIDACY
BME750 Research in Residence

0 credit  Fall & Spring Semester & First & Second Summer Session

Used to establish research in residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research.

Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

CIVIL, ARCHITECTURAL, & ENVIRONMENTAL ENGINEERING

CAE510 Structural Mechanics

3 credits  Offered By Announcement Only

Analysis of stress and deformation of solids. Application to systems in the elastic and inelastic range. Topics include beams of special geometry and support, stress concentrations, stresses in elastic foundations, torsion, energy methods, failure theories, and brittle fracture.

PREREQUISITE: CAE 310 AND SENIOR STANDING.

CAE511 Advanced Structural Analysis

3 credits  Fall Semester

General methods of indeterminate analysis. Elements of energy method in indeterminate analysis of axial, flexural torsional and composite members. Basic flexural and stiffness methods and matrix development are also included.

PREREQUISITE: CAE 310.

CAE520 Advanced Design of Concrete Structures

3 credits  Spring Semester

Design of reinforced concrete flat plates, flat slabs, two-way slabs, long columns, and slab-column connections are discussed. Deflections, crack widths, and background of current ACI Building Code are also included.

PREREQUISITE: CAE 320.

CAE521 Advanced Design of Steel Structures

3 credits  Fall Semester

Steel framing systems, design of members and connections of braced and rigid frames, design for torsion, and design of steel-concrete composite members are discussed.

PREREQUISITE: CAE 321.

CAE522 Design of Prestressed Concrete Structures

3 credits  Offered By Announcement Only

Materials and systems for prestressing, design of prestressed concrete members for flexure and shear, camber, deflection, and crack control are discussed. Design of continuous beams, compression members, two-way concrete floor systems, and the loss of prestress are also included. Prerequisite: CAE 320.

PREREQUISITE: CAE 320.

CAE523 Design of Masonry Structures

3 credits  Offered By Announcement Only

Masonry construction. Design of flexural and compression members, bearing walls, shear walls, diaphragms, and connections of masonry structures. Arches, vaults, and buttresses are also included.

PREREQUISITE: CAE 320.
CAE524 Design of Bridge Structures
3 credits
Offered By Announcement Only
Engineering principles of analysis and design of highway bridges. Topics include load types, failure modes, and design philosophies. Computation of design force envelopes via influence lines. Design of slabs, rolled beam, plate girder, reinforced concrete, and prestressed concrete bridges.
PREREQUISITE: CAE 310, 320, 321 OR PERMISSION OF INSTRUCTOR.

CAE525 Timber Structural Systems
3 credits
Offered By Announcement Only
Engineering properties of timber, design of tension, compression, and flexural members are covered. The design and detail of connections and hardware, and the design of timber systems and heavy timber construction is also included.
PREREQUISITE: CAE 310

CAE530 Water Resources Engineering II
3 credits
Fall Semester
Water quality regulations, fate and transport processes, water-quality control in rivers, lakes, wetlands, oceans, and ground water are discussed.
PREREQUISITE: CAE 430

CAE531 Surface-Water Hydrology
3 credits
Offered By Announcement Only
Rainwater characteristics, abstraction processes, surface-runoff, routing, and water-quality models. Design of stormwater-management systems, evapotranspiration, and regional water-management is also included as well as case studies.
PREREQUISITE: PREREQUISITE OR COREQUISITE: CAE 430.

CAE532 Ground-Water Hydrology
3 credits
Offered By Announcement Only
PREREQUISITE: CAE 330.

CAE533 Water-Quality Control in Natural Systems
3 credits
Offered By Announcement Only
Water quality regulations, fate and transport processes, water-quality control in rivers, lakes, wetlands, oceans, and ground water.
PREREQUISITE: CAE 430 (CAE 430 IS A PREREQUISITE OR CO-REQUISITE FOR THIS COURSE)

CAE540 Environmental Chemistry
3 credits
Spring Semester
Kinetics, equilibrium, acid-base, oxidation-reduction, and reaction chemistry applied to water and wastewater engineering.
PREREQUISITE: CHM 112 OR PERMISSION OF INSTRUCTOR.
CAE541 Environmental Microbiology
3 credits  
Spring Semester
Classification of microorganisms. Microbial agents of infectious diseases and modes of disease transmission. Control of pathogens through water and waste treatment, food protection, and insect control. Microbial ecology and bioremediation systems. Laboratory exercises in microbiology.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CAE542 Solid and Hazardous Waste Engineering
3 credits  
Fall Semester
Solid-waste characteristics, recycling, incineration, hazardous waste characteristics, prevention, and physical and chemical treatment are covered. Design projects are also included.
PREREQUISITE: CAE 340.

CAE543 Air Pollution Control Engineering
3 credits  
Spring Semester
Fundamentals of air pollution and air quality; properties and control of particulates, volatile organic compounds, carbon monoxide, sulfur oxides, and nitrogen oxides; motor vehicle emissions; health and aesthetic effects (acid rain, visibility), laws and regulations, meteorology and pollutant transport in the atmosphere; indoor air pollution.
PREREQUISITE: MAE 303 AND CAE330 OR MAE 309 OR PERMISSION OF INSTRUCTOR.

CAE550 Advanced Highway Design
3 credits  
Fall Semester
Functional classification and design volumes; Reviews of traffic, vehicle and roadway characteristics; Design controls, criteria and standards; Vertical alignments; Horizontal alignments; Compound curves; Cross sections; Climbing lanes; Earthwork computation; At-grade intersection; Interchange; Design consistency; GeoPak software implementation; Use of traffic simulation software as a design aid.
PREREQUISITE: CAE 450 OR EQUIVALENT.

CAE560 Sustainable Construction
3 credits  
Offered By Announcement Only
PREREQUISITE: SENIOR STANDING IN ARCHITECTURE OR ENGINEERING AND PERMISSION OF INSTRUCTOR

CAE570 Advanced Foundation Engineering
3 credits  
Spring Semester
PREREQUISITE: CAE 470 OR PERMISSION OF INSTRUCTOR
CAE580 Hospital and Health Care Facility Design  
3 credits  
First Summer Session  
Planning, design, and construction of modern hospital and health care facilities.  
Design criteria for functional services, and required structural and patient safety.  
Design standards. Discussion of construction related topics and problems.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CAE581 Energy-Efficient Building Design  
3 credits  
Offered By Announcement Only  
Concepts and methods of energy-efficient and environmentally-friendly building  
design. Topics include energy and sustainable design strategies, climate, passive  
and active solar design, passive cooling systems, day lighting, and computer simulation  
of energy flows in buildings. A quantitative understanding of energy fundamentals,  
examples from practice, and design exercises using computer simulation programs  
are emphasized.  
PREREQUISITE: MAE 303 OR PERMISSION OF INSTRUCTOR.

CAE590 Special Topics  
1-3 credits  
Offered By Announcement Only  
Sub-titles describing the topics to be offered will be shown in parentheses in  
the printed class schedule, following the title "Special Topics."  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CAE591 Special Topics  
1-3 credits  
Offered By Announcement Only  
Sub-titles describing the topics to be offered will be shown in parentheses in  
the printed class schedule, following the title "Special Topics."  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CAE592 Special Topics  
1-3 credits  
Offered By Announcement Only  
Sub-titles describing the topics to be offered will be shown in parentheses in  
the printed class schedule, following the title "Special Topics."  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CAE593 Special Topics  
1-3 credits  
Offered By Announcement Only  
Sub-titles describing the topics to be offered will be shown in parentheses in  
the printed class schedule, following the title "Special Topics."  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CAE594 Special Topics  
1-3 credits  
Offered By Announcement Only  
Sub-titles describing the topics to be offered will be shown in parentheses in  
the printed class schedule, following the title "Special Topics."  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CAE595 Special Problems  
1-4 credits  
Offered By Announcement Only  
Project course introducing methods of research through an individual investigation  
of current problems. Offered by special arrangement only.  
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.
CAE599 Cooperative Education
1 credit Offered By Announcement Only
Practical application of classroom theory through alternating semester or summer employment with industries offering positions consistent with the student's field of study. Course may be repeated. Periodic reports and conferences are required.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

CAE602 Finite Element Methods
3 credits Offered By Announcement Only
Variational principles and their application to finite element methods. Applications to: plane stress and plane strain, three-dimensional stress analysis, bending of plates, and axi-symmetric shells. Lecture, 3 hours.
PREREQUISITE: 500 LEVEL STRUCTURAL MECHANICS COURSE AND PERMISSION OF INSTRUCTOR.

CAE603 Master's Design Project I
3 credits Fall & Spring Semester & First & Second Summer Session
Comprehensive design project in civil, architectural, or environmental engineering.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CAE604 Master's Design Project II
3 credits Fall & Spring Semester & First & Second Summer Session
Continuation of CAE 603.
PREREQUISITE: CAE 603.

CAE605 Master's Project
3 credits Fall & Spring Semester & First & Second Summer Session
Project in civil, architectural, and environmental engineering. Course is required for the non-thesis master's student.
PREREQUISITE: PERMISSION OF ADVISORY COMMITTEE.

CAE611 Theory of Elasticity
3 credits Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CAE612 Structural Reliability
3 credits Offered By Announcement Only
Development of structural safety concepts, design code applications, load process analysis, and interaction of load and resistance variability. Consideration is given to structural system serviceability and safety.
PREREQUISITE: IEN 311 AND PERMISSION OF INSTRUCTOR.

CAE613 Stability of Structures
3 credits Offered By Announcement Only
Elastic and inelastic buckling of columns, frames and plates, lateral buckling of beams, beam-columns, and built-up columns. Energy methods (stability) background of various buckling provisions in the AISC and AISI specifications are discussed. Lecture, 3 hours.
PREREQUISITE: CAE 321, MTH 311.
CAE614 Structural Dynamics
3 credits
Offered By Announcement Only
Dynamic responses of structural elements in both the elastic and inelastic ranges. Lagrange's equations, energy models, numerical and analytical methods, vibrations of continuous systems (beams and plates) are discussed. Assigned readings.
PREREQUISITE: 500 LEVEL STRUCTURAL MECHANICS COURSE AND PERMISSION OF THE INSTRUCTOR.

CAE616 Fracture Mechanics
3 credits
Offered By Announcement Only
Theory of fracture mechanics for linear elastic and nonlinear material behavior, energy release rate, stress intensity factor, and J-integral with practical application to brittle fracture and fatigue. Case studies involving civil infrastructure such as bridges, buildings, pipelines and ships. Metallurgical aspects of fatigue and fracture.
PREREQUISITE: PERMISSION OF INSTRUCTOR

CAE630 Environmental Hydrology
3 credits
Offered By Announcement Only
Principles of ecohydrology, agricultural hydrology, impacts of climate change, fundamentals of remote sensing and geographic information systems for hydrologic applications, statistical applications in hydrology.
PREREQUISITE: CAE 530

CAE631 Wastewater Treatment and System Design
3 credits
Offered By Announcement Only
Characterization of domestic wastewater and flows. Sources of wastewater and health considerations. Unit processes for treatment of wastewater including screening, sedimentation, filtration, flocculation floatation, activated sludge, disinfection, sludge digestion, and sludge disposal.
PREREQUISITE: CAE 440, 540, AND 541 OR PERMISSION OF INSTRUCTOR.

CAE632 Water Treatment and System Design
3 credits
Offered By Announcement Only
Drinking water treatment standards, philosophy of setting standards, public health aspects of organic and inorganic contaminants, basis for design of treatment facilities, design of unit processes for aeration, sedimentation, coagulation, filtration, softening, disinfection, and oxidation are covered. Theory of membrane processes, ion exchange, and water treatment plant residuals are also included.
PREREQUISITE: CAE 440, 540, AND 541 OR PERMISSION OF INSTRUCTOR.

CAE640 Treatment Kinetics and Unit Operations
4 credits
Offered By Announcement Only
A study of unit operations in which students test various water and waste treatment processes in the laboratory. Lecture material focuses on data interpretation and description of rate mechanisms.
PREREQUISITE: CAE 540, 542.

CAE643 Risk Analysis
3 credits
Offered By Announcement Only
PREREQUISITE: PERMISSION OF INSTRUCTOR.
CAE680 Indoor Environmental Modeling
3 credits  Offered By Announcement Only
Prediction of indoor environment using computational fluid dynamics techniques. Advanced topics in thermal comfort and indoor air quality. Basic concepts of turbulence modeling and numerical methods for natural, forced, and mixed convection and jet flow indoors. Simulation of air velocity, temperature, and contaminant concentrations in buildings. Comparison of the simulated results with measured data.
PREREQUISITE: CAE 330 OR PERMISSION OF INSTRUCTOR.

CAE690 Special Problems
1- 3 credits  Offered By Announcement Only
Research and/or design projects. Individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CAE695 Advanced Topics
1- 3 credits  Offered By Announcement Only
Subject matter offerings based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title "Advanced Topics".
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CAE696 Advanced Topics
1- 3 credits  Offered By Announcement Only
Subject matter offerings based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title "Advanced Topics".
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CAE697 Advanced Topics
1- 3 credits  Offered By Announcement Only
Subject matter offerings based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title "Advanced Topics".
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CAE698 Advanced Topics
1- 3 credits  Offered By Announcement Only
Subject matter offerings based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title "Advanced Topics".
PREREQUISITE: PERMISSION OF INSTRUCTOR.

CAE710 Master's Thesis
1- 6 credits  Fall & Spring Semester & First & Second Summer Session
The student working on his/her Master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

CAE720 Research in Residence
0- 6 credits  Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the Master's degree after the student has enrolled for the permissible cumulative total in CAE 710 (usually six credits). Credit not granted. May be regarded as full-time residence.
CAE725 Continuous Registration--Master's Study
0 credit                     Fall & Spring Semester & First & Second Summer Session
To establish residence for non-thesis master's students who are preparing for major examinations. Credit not granted. Regarded as full-time residence.

CAE730 Pre-Candidacy Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Doctoral dissertation credits taken prior to Ph.D. student's candidacy. The student will enroll for credit as determined by his/her advisor. Not more than 12 hours of CAE 730 may be taken in a regular semester, nor more than six in a summer session.

CAE740 Post-Candidacy Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Doctoral dissertation credits taken after Ph.D. student have been admitted to candidacy. The student will enroll for credit as determined by his/her advisor. Not more than 12 credits in CAE 740 may be taken in a regular semester, nor more than six credits in a summer session.
PREREQUISITE: ADMISSION TO CANDIDACY

CAE750 Research in Residence
0 credit                     Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D. and D.A., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

ELECTRICAL & COMPUTER ENGINEERING

EEN500 Engineering Analytical Techniques
3 credits                                                             Offered By Announcement Only
Complex variables, analytic functions, power series, residue theorem, conformal mappings, series solution, Bessel functions, Legendre polynomials. singular value decomposition, vector, and matrix norms are discussed.
PREREQUISITE: MTH 311.

EEN502 Engineering Acoustics
3 credits                                                             Fall Semester
Introduction to basic principles of acoustics, methods of sound measurement, physiological, psychological acoustics, the acoustics of the major classes of musical instruments and speech, fundamentals of transducers, architectural acoustics, and the effects and control of noise are covered.
PREREQUISITE: EEN 336 OR PERMISSION OF INSTRUCTOR

EEN503 Principles of Electro-optics
3 credits                                                             Fall Semester
Principles of optics, optical fibers, electro-optics, and light wave propagation in anisotropic and periodic media, guided waves, and integrated optics are discussed. Electro-optic devices including sources and detectors, optical fiber communication, and optics for medical and biomedical applications are also covered.
PREREQUISITE: PHY 206, 207 AND EEN 301 OR EQUIVALENT.
EEN504 Optics and Fiber Communication
3 credits  
Spring Semester
Introduction to optics and fiber communication, light propagation in free space and waveguides, imaging, wave phenomena and diffraction, interferometer, spectrometer, holography, fiber coupling, and fiber communication are covered. Lecture, 1 1/2 hours; laboratory, 3 hours.
PREREQUISITE: EEN 301 OR PREREQUISITE OR COREQUISITE: BME 545.

EEN507 Active Filter Design
3 credits  
Spring Semester
Active low pass filter design, gain-tuning and passive-tuning, immittance calculations, high-frequency low pass filters, frequency and time domain analysis of low pass, high pass, bandpass, and bandstop filters are discussed. Classical filters and Active filter classification including gain-sensitivity limitations are also included.
PREREQUISITE: EEN 307.

EEN508 Digital Control Systems
3 credits  
Offered By Announcement Only
Basic concepts relevant to the analysis and design of digital computer controlled systems. Sampling, z-transform, discrete transfer functions, discrete-time state space modeling, stability, reachability, and observability are discussed. Analysis and design in time and frequency domains, state feedback and observers, optimal control, estimation, and linear quadratic Gaussian design are also included.
PREREQUISITE: EEN 308.

EEN510 Passive Filter Design
3 credits  
Offered By Announcement Only
Design of RLC passive filters, properties of positive-real functions, and Brune test are discussed. Design of driving-point and transfer immittances of RC, RL, LC, and RLC one-port and two-port networks are also covered as well as the design of Butterworth, Chebyshev, and elliptic ladder filters.
PREREQUISITE: EEN 307.

EEN511 Software Engineering
3 credits  
Spring Semester
Software Development: Specification and analysis, methodologies, management and control. Advanced programming techniques: dynamic programming, fast data retrieval and sorting, enumerators, data structures, and data management. The limits of software engineering, computability and complexity analysis.
PREREQUISITE: EEN 318.

EEN512 Software Engineering and Architecture
3 credits  
Spring Semester
PREREQUISITE: EEN 318.

EEN513 Software Design and Verification
3 credits  
Spring Semester
PREREQUISITE: EEN 318 AND SENIOR STANDING.
EEN514 Computer Architecture
3 credits  Spring Semester & First Summer Session
Computer data and instruction types, survey of existing architectures, and the interaction between hardware and software sub-systems are discussed. Advanced topics in computer architecture.
PREREQUISITE: EEN 414.

EEN516 Analog Integrated Circuits
3 credits  Fall Semester
Analysis and design of analog integrated circuits with emphasis on MOS technology. Design of operational amplifiers, comparators, sample and hold circuits, and voltage references are discussed. Fundamentals of data converters and CAD methods for analog integrated circuits are also covered.
PREREQUISITE: EEN 306.

EEN519 Design of Computing Languages
3 credits  Offered By Announcement Only
Major features of modern programming languages with emphasis on design and software efficiency. Interaction between language design and the design of its compiler are included.
PREREQUISITE: EEN 218.

EEN521 Computer Operating Systems
3 credits  Fall Semester
The design and implementation of operating systems. Virtual memory and memory management, resource allocation, device drivers, process creation, control, communications and scheduling, file systems, data protection, security, parallel processing and time-sharing. The class includes a significant operating system implementation project.
PREREQUISITE: EEN 318

EEN532 VLSI Systems
3 credits  Fall Semester
Fundamentals of MOS Technology in VLSI. System data, control flow, structures, design, layout, mask making, fabrication, packaging, and testing of VLSI chips are discussed. Highly concurrent Very Large Scale Integration computational systems are also covered.
PREREQUISITE: EEN 304 AND 305.

EEN533 Random Signals and Noise
3 credits  Fall Semester
Probability models, Bays' theorem, Limit theorems of Laplace and Poisson, functions of random variables, Central limit theorem, conditional expectation and estimation, Stochastic processes, stationary and ergodicity, cross-spectral analysis, filtering, and prediction are discussed.
PREREQUISITE: IEN 310 OR EEN 310.

EEN534 Communication Networks
3 credits  Fall Semester
Principles of digital communications, Local Area Networks (LANs), Wide Area Networks (WANs), Open systems Intercommunication (OSI), Internet reference models, internet architecture and protocols, packet switching and routing, and network performance are discussed.
PREREQUISITE: EEN 310 OR IEN 310.
EEN536 Digital Signal Processing
3 credits  
Offered By Announcement Only
Fast Fourier transform, design, implementation, realization of digital filters, finite word length effects, decimation, interpolation, multirate signal processing, and Discrete Hilbert transform are covered.
PREREQUISITE: EEN 436.

EEN537 Principles of Artificial Intelligence
3 credits  
Fall Semester
Search techniques, game trees, exhaustive vs. cutoff search, natural language processing, augmented transition networks, knowledge representation, cognitive aspects, semantic networks, problem-solving, expert systems, and AI machines are covered.
PREREQUISITE: EEN 218.

EEN538 Introduction to Digital Image Processing
3 credits  
Fall Semester

EEN539 Digital Communications
3 credits  
Offered By Announcement Only
Principles for the analysis and design of digital communications systems. Nyquist sampling, signal space representation, digital modulation techniques and optimal receiver design, ISI channels, error control coding, convolutional codes, Viterbi decoder, and wireless applications.
PREREQUISITE: EEN 404

EEN540 Digital Speech and Audio Processing
3 credits  
Spring Semester
Introduction to human speech production, hearing, and perception. Digital speech and audio signal analysis in time and frequency, speech and audio coding, speech synthesis and recognition, language modeling, design of systems for human-machine interaction are also covered.
PREREQUISITE: EEN 436 OR CONSENT OF INSTRUCTOR.

EEN542 Digital Integrated Circuits
3 credits  
Spring Semester
Design and operation of state-of-the art digital integrated circuits. Circuit simulation methods using CAD programs, various TTL, CMOS, ECL, and I2L families are discussed.
PREREQUISITE: EEN 304, 306.

EEN543 BioNanotechnology
3 credits  
Spring Semester
PREREQUISITE: MTH 210 OR PERMISSION OF INSTRUCTOR

EEN546 Reliable Digital System Design
3 credits  
Offered By Announcement Only
Topics include descriptive technique for digital systems, synchronizer failure and metastability estimation, design for testability, and estimating digital system reliability. Computer-Aided Engineering (CAE) tools are also covered. Not open to students with credit in EEN 454. Offered only for Graduate students.
PREREQUISITE: EEN 316.
EEN548 Machine Learning

3 credits

Offered By Announcement Only

Fundamentals of intelligent system design and strategies of learning capability simulation. Selected case studies of learning systems for engineering applications are included.

PREREQUISITE: EEN 218 AND MTH 309 OR PERMISSION OF INSTRUCTOR.

EEN552 Power Electronics

3 credits

Fall Semester

Analysis and design of solid-state power electronic circuits including DC/DC, AC/DC and DC/AC converters, controller design, power electronics applications, and associated laboratory experiments.

PREREQUISITE: EEN 306, EEN 311

EEN553 Neural Networks

3 credits

Offered By Announcement Only

Artificial neural network algorithms and structures, learning process, perceptron, least-mean-square algorithms, multilayer perceptron, error back-propagation, radial-basis function networks, the Hopfield network, and self-organizing systems are discussed.

PREREQUISITE: IEN 310 OR EEN 310.

EEN555 Microwave Transistor Amplifier Design

3 credits

Fall Semester

Analysis and design of transistor amplifiers and oscillators at microwave frequencies. Scattering parameter methods, stability considerations, matching networks, and narrowband and broadband techniques are discussed. Computer aided design methods for microwave transistor amplifiers are also included.

PREREQUISITE: EEN 306.

EEN562 Wireless and Cellular Communication

3 credits

Fall Semester

Wireless Channel Characterization: path loss, shadowing, fading, frequency-selective channels, Doppler spread, and delay spread. Diversity techniques: frequency, time and space diversity. Multiple Antenna Systems: space-time coding, beam forming and layered space-time system. Digital Modulation: adaptive modulations and Orthogonal Frequency Division Multiplexing (OFDM). Cellular Concept: frequency reuse, co-channel interference and handoff. Multiple Access Methods: Frequency Division Multiple Access (FDMA), Time Division Multiple Access (TDMA), Code Division Multiple Access (CDMA) and random access. CDMA: spreading codes, RAKE receiver, multiuser detection and power control.

PREREQUISITE: EEN 404.

EEN563 Wireless Communication Lab

1 credit

Offered By Announcement Only

Computer simulation of path loss, shadowing and fading in wireless channels, performance of various digital modulation methods in both Gaussian and wireless channels, diversity methods, equalization methods including zero-forcing, minimum mean-square error (MMSE) and decision-feedback equalization (DFE), co-channel interfacing in cellular systems, space-time coding. Orthogonal Frequency Division Multiplexing (OFDM) systems, spreading codes for Code Division Multiple Access (CDMA) systems, and matched-filter receiver and multiuser detector for CDMA systems. Measurement of wireless signals in various environments.

PREREQUISITE: PREREQUISITE OR COREQUISITE: EEN 562.
EEN564 Wireless Networks  
3 credits  
Spring Semester  
Introduction of wireless channels and network. Introduction of medium access control: Frequency Division Multiple Access (FDMA), Time Division Multiple Access (TDMA), Code Division Multiple Access (CDMA) and Carrier Sense Multiple Access. Wireless data networks IEEE 802.11 (WiFi), IEEE 802.16 (WiMax) and Bluetooth. Wireless network layer: mobile IP and mobile ad-hoc networks. Wireless transport layer: mobile TCP. Wireless Cellular systems: network structure and call processing of GSM and CDMA systems.  
PREREQUISITE: EEN 534 OR 575 OR PERMISSION OF THE INSTRUCTOR

EEN565 Introduction to Information Theory and Coding  
3 credits  
Offered By Announcement Only  
Entropy, conditional entropy, mutual information, source coding, Huffman code arithmetic code, channels and channel capacity, error detection, error correction, and Hamming codes are discussed. An introduction to linear block codes and cyclic codes is included.  
PREREQUISITE: IEN 310 OR EEN 310.

EEN567 Database Design and Management  
3 credits  
Spring Semester  
Database systems design, modeling, implementation, management methodologies, and techniques. Different database systems are addressed including relational, object-oriented, object-relational, and distributed database systems. Internet (WWW) technology, data warehousing, and online analytical processing applications of database management systems and hands-on experience with commercial database systems is also included.  
PREREQUISITE: EEN 218

EEN568 Internet Computing II  
3 credits  
Fall Semester  
Java programming for client/server networking, multi-threading, database connectivity, and servlets. Principles and practices used for accessing back-end databases through web applications. Use of eXtensible Markup Language (XML) for processing.  
PREREQUISITE: EEN 368

EEN570 Network Client-Server Programming  
3 credits  
Spring Semester  
Introduction to server-client systems and programming. Advanced server-client design and implementation based on distributed component object model in Windows and UNIX.  
PREREQUISITE: EEN 218 OR EQUIVALENT

EEN571 Interactive Multimedia Computing  
3 credits  
Spring Semester  
Multimedia fundamentals including hardware, software, standards, concepts and issues, compression, decompression, user interface design, query by content and multimedia indexing are discussed.  
PREREQUISITE: EEN 318

EEN572 Object-Oriented and Distributed Database Management Systems  
3 credits  
Offered By Announcement Only  
PREREQUISITE: EEN 567 OR EQUIVALENT.
EEN573 Network Computing  
3 credits  
Spring Semester  
PREREQUISITE: EEN 368 AND 567.

EEN574 Agent Technology  
3 credits  
Offered By Announcement Only  
Agent definition and applications, agent modeling, theories, agent representation using KIF (Knowledge Interchange Format), agent behavior, ethical and emotional agents, agent communication languages (KQML (Knowledge Query and Manipulation Language)), agent development environments and tools, agent systems (cooperative agents, interface agents, information agents, learning agents, believable agents, agents for workgroups, mobile agents), and agent case studies are covered.  
PREREQUISITE: EEN 537 OR EQUIVALENT.

EEN575 Data Network Design and Management  
3 credits  
Spring Semester  
Networking fundamentals and current technologies. Data network planning, analysis, design, and management techniques. Different network technologies are addressed and contrasted in terms of topology, performance, and scope of real applications. Network management systems are investigated including fault, configuration, security, and performance management. Network management information bases, protocols, and hands-on experience with network equipment and network management systems are also included.  
PREREQUISITE: EEN 310 OR IEN 310.

EEN576 Internet and Intranet Security  
3 credits  
Fall Semester  
Security issues and applications for securing internet and intranet-based information exchange. Secure information models, security tools, security services, security protocols, electronic commerce, virtual private networks, firewalls, and security versus cost tradeoffs are covered.  
PREREQUISITE: EEN 368.

EEN577 Data Mining  
3 credits  
Offered By Announcement Only  
Introduction to the general principles of inferring useful knowledge from large data sets. Data mining algorithms, including inferring rules, linear regression, decision trees, association rules, and predictive models. Evaluation of data mining algorithms, including training, testing, prediction, comparison, cost, and cross-validation. Data mining applications.  
PREREQUISITE: EEN 567 OR EQUIVALENT.

EEN578 E-Commerce Technology  
3 credits  
Offered By Announcement Only  
Tools and techniques providing the foundation for the design, implementation, and deployment of e-commerce systems. Search engines, information retrieval for e-commerce, e-commerce interfacing design, and e-commerce systems case studies are also included.  
PREREQUISITE: EEN 368
EEN579 Mobile Computing
3 credits  Offered By Announcement Only
Mobile computing and proxy architectures, mobile web protocols, mobile user interfaces, applications, systems-ware adaptations, mobile databases, transactions, data synchronization, privacy, authentication, and security are covered.
PREREQUISITE: EEN 368.

EEN580 Electrical and Computer Engineering Internship
1-3 credits  Fall & Spring Semester
Analysis, design, and research experience obtained at an operating and recognized industry. Approved project jointly supervised and assessed by departmental faculty and industrial partner.
PREREQUISITE: PERMISSION OF ADVISOR.

EEN581 Special Problems
1-3 credits  Fall Semester
Project course introducing methods of research through an individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

EEN582 Special Problems
1-3 credits  Spring Semester
Project course introducing methods of research through an individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

EEN583 Special Problems
1-3 credits  First Summer Session
Project course introducing methods of research through an individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

EEN584 Special Problems
1-3 credits  Second Summer Session
Project course introducing methods of research through an individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

EEN585 Special Problems
1-3 credits  Offered By Announcement Only
Project course introducing methods of research through an individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

EEN586 Multimedia Networking
3 credits  Fall Semester
PREREQUISITE: EEN 534 OR 575.
EEN587 Multimedia Databases
1-3 credits Fall Semester
Introduction to the fundamental concepts and techniques pertinent to multimedia databases. Introduction to a variety of techniques and emerging innovative solutions to represent, store, index, retrieve, integrate, and manipulate data in various media type(s) to construct multimedia databases.
PREREQUISITE: EEN 567 OR PERMISSION OF INSTRUCTOR. PREREQUISITE OR COREQUISITE: EEN 571.

EEN590 Special Topics in Information Technology
1-3 credits Offered By Announcement Only
Lecture courses in selected areas of specialization within Information Technology.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN591 Special Topics in Information Technology
1-3 credits Offered By Announcement Only
Lecture courses in selected areas of specialization within Information Technology.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN592 Special Topics in Audio Engineering
1-3 credits Offered By Announcement Only
Lecture courses in selected areas of specialization within Audio Engineering.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN593 Special Topics in Audio Engineering
1-3 credits Offered By Announcement Only
Lecture courses in selected areas of specialization within Audio Engineering.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN594 Special Topics in Computer Engineering
1-3 credits Offered By Announcement Only
Lecture courses in selected areas of specialization within Computer Engineering.
PREREQUISITE: PERMISSION OF INSTRUCTOR - 1 COUPON

EEN595 Special Topics in Computer Engineering
1-3 credits Offered By Announcement Only
Lecture courses in selected areas of specialization within Computer Engineering.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN596 Special Topics in Computer Engineering
1-3 credits Offered By Announcement Only
Lecture courses in selected areas of specialization within Computer Engineering.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN597 Special Topics in Electrical Engineering
1-3 credits Offered By Announcement Only
Lecture courses in selected areas of specialization within Electrical Engineering.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN598 Special Topics in Electrical Engineering
1-3 credits Offered By Announcement Only
Lecture courses in selected areas of specialization within Electrical Engineering.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
Graduate Course Listing

COLLEGE OF ENGINEERING
ELECTRICAL & COMPUTER ENGINEERING

EEN599 Special Topics in Electrical Engineering
1-3 credits Offered By Announcement Only
Lecture courses in selected areas of specialization within Electrical Engineering.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN615 M. S. Design Project I
3 credits Fall & Spring Semester
Comprehensive M.S. design project in electrical or computer engineering. Open only to students in the BS/MS dual-degree program.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN616 M.S. Design Project II
3 credits Fall & Spring Semester
Continuation of EEN 615. Open only to students in the BS/MS dual-degree program.
PREREQUISITE: EEN 615.

EEN634 Modeling and Analysis of Computer Networks
3 credits Offered By Announcement Only
Elements of queuing theory, performance analysis of protocols, flow and congestion control, random access schemes, routing algorithms, and integrated services digital networks (ISDN) are discussed.
PREREQUISITE: EEN 534.

EEN635 Advanced Electronics
3 credits Offered By Announcement Only
Current topics in electronic design including filter design using striplines and microstrip structures, switching, mixing, and modulation using microwaves transistors. Advanced computer aided design methods are also included.
PREREQUISITE: EEN 555.

EEN638 Computer Vision
3 credits Spring Semester
Principles of computer vision. Segmentation, shape and texture analysis, 3D scene analysis, polyhedral scenes, time-varying image analysis, parallel processing algorithms, matching, and recognition are covered.
PREREQUISITE: EEN 538 OR PERMISSION OF INSTRUCTOR

EEN653 Pattern Recognition and Neural Networks
3 credits Offered By Announcement Only
Statistical pattern classification, feature extraction, cluster analysis, neural net models, Hopfield net, competitive learning, multi-layer perceptron, and the Boltzmann machine are discussed.
PREREQUISITE: EEN 538 OR PERMISSION OF INSTRUCTOR.

EEN656 Information Theory
3 credits Offered By Announcement Only
Measure of uncertainty and entropy, two dimensional sources, noisy channels, mutual and transinformation, equivocation, efficiency and channel capacity, minimum redundancy coding, error-detecting, error-correcting codes, continuous channel without memory. Gaussian additive noise, sampling theorem, and vector space are covered.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
EEN671 Advanced Interactive Multimedia Information Systems
3 credits  Fall Semester
Multimedia data models, advanced content-based retrieval, indexing, architecture
design, management of networked multimedia systems, simultaneous access, and display
of audio, video, and graphics information in centralized and distributed environments
are covered.
PREREQUISITE: EEN 571.

EEN681 Advanced Problems
1- 3 credits  Fall Semester
Research and/or design projects through an individual investigation of current
problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN682 Advanced Problems
1- 3 credits  Spring Semester
Research and/or design projects through an individual investigation of current
problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN683 Advanced Problems
1- 3 credits  First Summer Session
Research and/or design projects through an individual investigation of current
problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN684 Advanced Problems
1- 3 credits  Second Summer Session
Research and/or design projects through an individual investigation of current
problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN685 ADVANCED PROBLEMS.
1- 3 credits  Offered By Announcement Only
Research and/or design projects through an individual investigation of current
problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN694 Advanced Topics in Computer Engineering
1- 3 credits  Offered By Announcement Only
Subject matter offerings in computer engineering based upon student demand and
availability of faculty. Subtitles describing the topics to be offered will be
shown in parentheses in the printed class schedule, following the title "Advanced
Topics".
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN695 Advanced Topics in Computer Engineering
1- 3 credits  Offered By Announcement Only
Subject matter offerings in computer engineering based upon student demand and
availability of faculty. Subtitles describing the topics to be offered will be
shown in parentheses in the printed class schedule, following the title "Advanced
Topics".
PREREQUISITE: PERMISSION OF INSTRUCTOR.
EEN696 Advanced Topics in Computer Engineering
1-3 credits   Offered By Announcement Only
Subject matter offerings in computer engineering based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title "Advanced Topics".
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN697 Advanced Topics in Electrical Engineering
1-3 credits   Offered By Announcement Only
Subject matter offerings in electrical engineering based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title "Advanced Topics".
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN698 Advanced Topics in Electrical Engineering
1-3 credits   Offered By Announcement Only
Subject matter offerings in electrical engineering based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title "Advanced Topics".
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN699 Advanced Topics
1-3 credits   Offered By Announcement Only
Subject matter offerings based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title "Advanced Topics".
PREREQUISITE: PERMISSION OF INSTRUCTOR.

EEN710 Master's Thesis
1-6 credits   Fall & Spring Semester
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

EEN720 Research in Residence
0 credit   Fall & Spring Semester
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in EEN 710 (usually six credits). Credit not granted. May be regarded as full time residence.

EEN725 Continuous Registration--Master's Study
0 credit   Fall & Spring Semester
To establish residence for non-thesis master's students who are preparing for major examinations. Credit not granted. Regarded as full time residence.

EEN730 Pre-Candidacy Doctoral Dissertation
1-12 credits   Fall & Spring Semester & First & Second Summer Session
Doctoral dissertation credits taken prior to Ph.D. student's candidacy. The student will enroll for credit as determined by his/her advisor. Not more than 12 hours of EEN 730 may be taken in a regular semester, nor more than six in a summer session.
EEN740 Post-Candidacy Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Doctoral dissertation credits taken after Ph.D. student has been admitted to candidacy. The student will enroll for credit as determined by his/her advisor. Not more than 12 credits in EEN 740 may be taken in a regular semester, nor more than six credits in a summer session.
PREREQUISITE: ADMISSION TO CANDIDACY

EEN750 Research in Residence
0 credit  Fall & Spring Semester
Used to establish research in residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

INDUSTRIAL ENGINEERING
IEN501 Manufacturing Analysis and Design I
3 credits  Offered By Announcement Only
Analysis of Production Systems stressing diagnosis of problems associated with work measurement, manufacturing methodologies, and their interaction with cost factors.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

IEN502 Manufacturing Analysis and Design II
3 credits  Offered By Announcement Only
Analysis of production systems stressing diagnosis of problems of quality and production control, utilizing quantitative techniques and analytical methods.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

IEN505 Robotics
3 credits  Fall Semester
Fundamentals of robotics including kinematics and dynamics, trajectory planning, sensors and actuators, robotic vision, and case studies. Building your own robot is an integral part of hands-on laboratory exercises. Matlab control toolbox and image analysis toolbox will be extensively used for design and analysis.
PREREQUISITE: IEN 406.

IEN507 Design of Manufacturing Systems
3 credits  Spring Semester
State-of-the-art techniques and tools relevant to the design, analysis, and control of modern manufacturing systems. Topics include modeling of manufacturing systems, tools for manufacturing system analysis, manufacturing system planning and scheduling, and lean manufacturing systems.
PREREQUISITE: IEN 465 OR PERMISSION OF INSTRUCTOR.

IEN509 Automated Assembly
3 credits  Fall Semester
Fundamentals of automated assembly including parts transfer systems and feeders, parts orientation and grasping techniques, product design for automated assembly (DFA), assembly robots, and performance and economics of assembly systems.
PREREQUISITE: IEN 406 OR PERMISSION OF INSTRUCTOR.
IEN512 Statistical Quality Control and Quality Management
3 credits  Spring Semester
This course addresses the concepts, theories, tools and methodologies employed in the management and improvement of quality. The course examines many of the advance topics in statistical quality control including control charts and process capability studies, acceptance sampling, as well as Quality Function Deployment (QFD) and introduction to reliability. Also covered in the course are Lean Six Sigma methodology, tools and concepts.
PREREQUISITE: IEN 311 (MAS 311) OR IEN 312 (MAS 312).

IEN513 Quality Management in Service Organizations
3 credits  Fall Semester
Course examines the issues of quality and productivity management in the service sector. Topics covered include the development and use of questionnaires, service industry applications of quality such as in banking, insurance, healthcare, transportation, government, public utilities, and retail trade.
PREREQUISITE: SENIOR STANDING OR PERMISSION OF INSTRUCTOR.

IEN524 Decision Support Systems in Industrial Engineering
3 credits  Spring Semester
Theory and application of decision support systems in industrial engineering. Topics include the study of model-based, data-based, knowledge-based, and communication-based decision support systems. Emphasis is placed on the selection process of the appropriate systems for various decision problems in industrial environments.
PREREQUISITE: SENIOR STANDING OR PERMISSION OF INSTRUCTOR.

IEN547 Computer Simulation Systems
3 credits  Spring Semester
Computer simulation and the development of simulation models. Application of discrete and continuous system simulation languages to systems studies is also included.
PREREQUISITE: IEN 442 (MAS 442) OR PERMISSION OF INSTRUCTOR.

IEN551 Accident Prevention Systems
3 credits  Spring Semester
Introduction to the basic principles of accident prevention and how to apply the safety engineering approach to the design of industrial accident prevention systems.
PREREQUISITE: IEN 351 OR PERMISSION OF INSTRUCTOR.

IEN557 Ergonomics and Human Factors Engineering
3 credits  Fall Semester
The study of human capacities and limitations with emphasis on human performance in system design. Topics include design of displays and controls, workload, job design, human information processing, anthropometry, workplace design, biomechanics, task analysis, and research techniques in human factors engineering. Lecture, 3 hours.
PREREQUISITE: IEN 312 (MAS 312) OR PERMISSION OF INSTRUCTOR.

IEN558 Industrial Hygiene I
3 credits  Fall Semester
Recognition of occupational chemical health hazards. Evaluation methods and analytical procedures used to determine level of exposure to chemical and toxic hazards. Control measures and compliance with OSHA requirements with special emphasis on industrial ventilation, and other methods of control are included.
PREREQUISITE: ((CHM 111 OR CHM 151) AND SENIOR STANDING) OR PERMISSION OF INSTRUCTOR.
IEN559 Industrial Hygiene II
3 credits  
Spring Semester  
Recognition of physical occupational health hazards and evaluation methods and instruments used in measuring exposure levels with special emphasis on physical hazards. Protective measures and compliance with OHSA requirements is also included. Lecture, 3 hours. 
PREREQUISITE: ((CHM 111 OR 151) AND SENIOR STANDING) OR PERMISSION OF INSTRUCTOR.

IEN565 Design of Integrated Manufacturing Systems
3 credits  
Offered By Announcement Only  
The design of integrated manufacturing systems including concepts of production planning and control, forecasting techniques, inventory systems, production planning and scheduling methods, material requirement planning, plant layout and facility location, design principles of material handling, new trends in batch, and discrete-parts are discussed. 
PREREQUISITE: SENIOR STANDING OR PERMISSION OF INSTRUCTOR.

IEN568 Materials Handling and Facilities Planning
3 credits  
Spring Semester  
Analysis and design of production and service facilities, emphasis on material handling requirements. Capacity requirements, facility location, layout, storage systems and warehousing are discussed. 
PREREQUISITE: SENIOR STANDING OR PERMISSION OF INSTRUCTOR.

IEN570 Engineering Management
3 credits  
Spring Semester  
Integrating engineering discipline into the social and economic considerations of managing systems. Tools and techniques used by engineering managers including engineering project life cycle, role playing, communication, decision-making in engineering management, and managing change in engineering organizations are discussed. 
PREREQUISITE: IEN 311 (MAS 311) OR IEN 312 (MAS 312) OR PERMISSION OF INSTRUCTOR.

IEN571 Engineering Entrepreneurship
3 credits  
Fall Semester  
The conversion of technological know-how and engineering theories into business enterprises. The role of technology in creating wealth, connecting technology with market, the role and characteristics of entrepreneurs, starting a business and the business plan, innovation, industrial and service organizations, and the new business environment. 
PREREQUISITE: SENIOR STANDING OR PERMISSION OF INSTRUCTOR.

IEN572 Management of Technological Innovation
3 credits  
Fall Semester & Second Summer Session  
Engineering, Science and Management Principles contributing to the development of a successful framework for Managing technology with an organization, nationally or internationally. The process of technological innovations, technological, planning and forecasting, and socio-economic changes. Prerequisite: Senior or graduate standing. 
PREREQUISITE: SENIOR STANDING OR PERMISSION OF INSTRUCTOR.

IEN590 Special Topics in Industrial Engineering
1- 3 credits  
Offered By Announcement Only  
Sub-titles describing the topics are shown in parentheses in the class schedule, following the title "Special Topics". 
PREREQUISITE: PERMISSION OF INSTRUCTOR.
IEN591 Dean's Seminar: Entrepreneurship
1 credit Offered By Announcement Only
Weekly seminar given by guest speakers on topics including process of management, marketing, planning, R & D, financing, taxation, governmental regulations, and international commerce.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

IEN594 Master's Capstone Design Project
0-3 credits Fall Semester
A capstone design project for students in the five-year BSIE/MSIE program. Integration of Industrial Engineering principles and techniques in the design and improvement of production and service systems is emphasized. Offered for students in this program only.
PREREQUISITE: METHODS ANALYSIS, APPLIED PROBABILITY AND STATISTICS AND SENIOR STANDING.

IEN595 Special Problems
1-3 credits Offered By Announcement Only
Project course introducing methods of research through an individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

IEN596 Special Problems
1-3 credits Offered By Announcement Only
Project course introducing methods of research through an individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

IEN599 Cooperative Education
1 credit Offered By Announcement Only
Practical application of classroom theory through alternating semester or summer employment with industries offering positions consistent with the student's field of study. Course may be repeated. Periodic reports and conferences are required.

IEN601 Advanced Industrial Engineering Concepts
3 credits Fall Semester
The application of advanced concepts of Industrial Engineering to modern systems with an emphasis on the solution of real world problems.
PREREQUISITE: IEN 301 OR PERMISSION OF INSTRUCTOR.

IEN607 New Product Development and Introduction
3 credits Fall Semester
Dynamics of converting ideas into marketable products, selecting products, and defining their specifications to achieve competitive advantage. Product development steps are examined critically in the context of real case studies. Topics include the process of fostering a creative environment for new products and processes, planning for innovation, process of product patenting, organizing the technical effort, integration of functions, risk assessment and evaluation, and management techniques for improving manufacturing operations.
PREREQUISITE: GRADUATE STANDING.
IEN612 Design of Experiments
3 credits
Design and analysis of experiments, randomized blocks, Latin Squares, factorials, multiple correlation and regression, and application to response surfaces are discussed. 3 hours.
PREREQUISITE: IEN 311 OR MAS 311 OR EQUIVALENT.

IEN613 Quality Through Planned Experimentation
3 credits
Sequential experimentation and guidance on how to build the sequence and use graphical methods to ascertain how much the planned change contribute to the variation in the data. Experimentation is presented as a system in the context of a model to improve quality, and integrate statistical process control (SPC) with methods of design. Examples presented contain problems often encountered in actual experimentation in a manufacturing or a service facility. Not open to students with credit in IEN 612.
PREREQUISITE: IEN 311 OR PERMISSION OF INSTRUCTOR.

IEN614 Advanced Quality Control
3 credits
PREREQUISITE: IEN 512.

IEN617 Quality Through Design
3 credits
The integrated processes and teamwork essential to success with products are presented. All activities of product development are covered. Topics include concept of a new region, concurrent engineering, competitive benchmarking, and house of quality, robust design, and production preparation. Special emphasis is placed on the integration of quality function deployment and Taguchi's quality engineering into total development.
PREREQUISITE: IEN 612 or MAS 603.

IEN641 Applied Operations Research
3 credits
Inventory theory, queuing theory, optimization models, and linear and dynamic programming for deterministic and probabilistic cases. Emphasis is placed on applications.
PREREQUISITE: IEN 441 OR PERMISSION OF INSTRUCTOR.

IEN642 Linear Programming and Extensions
3 credits
Formulation, solution, post optimality analysis of linear programming problems; revised simplex, parametric programming, decomposition of large-scale systems. Use of computer packages. Introduction to integer programming, network flows, and nonlinear programming applications.
PREREQUISITE: LINEAR ALGEBRA OR EQUIVALENT.

IEN643 Integer Programming and Network Flows
3 credits
Computationally effective approaches to integer optimization, cutting planes, implicit enumeration, network flows, single commodity, and multi-commodity flows are covered.
PREREQUISITE: MAS 647/ IEN642.
IEN644 Nonlinear and Dynamic Programming

3 credits  
Offered By Announcement Only
Solution of nonlinear optimization problems by classical procedures and search algorithms. Recursive optimization using computationally effective techniques is also included.
PREREQUISITE: MTH 112 OR EQUIVALENT.

IEN645 Stochastic Processes

3 credits  
Fall Semester
Introduction to discrete state Markov processes and renewal processes with applications to queuing, replacement, and reliability problems.
PREREQUISITE: MAS 311, IEN 311, MTH 524 OR EQUIVALENT.

IEN646 Queuing Models

3 credits  
Offered By Announcement Only
Formulation, solution, and application of models useful in the analysis of waiting lines.
PREREQUISITE: MAS 311, IEN 311, OR MTH 524 OR EQUIVALENT.

IEN651 System Safety Engineering

3 credits  
Fall Semester
Understanding system safety, evaluating a system for its state of safety over its life cycle, determining if that state is acceptable, and evaluating counter-measures for their effectiveness in bringing the system to an acceptable state are discussed. Presenting quantitative methods that may be used in safety data analysis is also included.
PREREQUISITE: IEN 311 AND 351.

IEN655 Human Factors in Management of Technology

3 credits  
Offered By Announcement Only
Implications of the influx of computer and automation technologies into work settings for behavior within organizations. Human factors issues associated with the implementation of technology including hardware and software design, job design, and workplace design. Organizational issues such as decision-making, communication, and human centered design of products.

IEN656 Human Information Processing and System Design

3 credits  
Spring Semester
Understanding the capabilities of humans as information processors in relation to system design, including job and equipment (hardware and software) design. Course topics include attentional capacity, vigilance, mental workload, verbal and non-verbal perception, speech recognition, decision making, skilled performance, human reliability, and process control.
PREREQUISITE: IEN 557.

IEN657 Ergonomics and Occupational Biomechanics

3 credits  
Spring Semester
Effects of human factors in the improvement of performance of systems. Human capacities, capabilities, and limitations as derived from anatomical, physiological, and psychological principles are applied to the design of tools and equipment. Incorporation of all factors into systems design to achieve better system performance is emphasized.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
IEN658 Ergonomics and Special Populations
3 credits
Spring Semester
Ergonomic issues relevant to design for older adults and special populations such as the handicapped. Primary emphasis is placed on work environments, transportation and communication systems, and home environments. Topics include cognitive and physiological characteristics of special populations, workplace design, job and equipment design, rehabilitation engineering, clinical ergonomics, and legislation such as the ADA. Lecture, 3 hours.
PREREQUISITE: IEN 557.

IEN659 Work Physiology
3 credits
Offered By Announcement Only
Physiological responses to occupational work including aspects of endurance, fatigue, recovery, and the energy cost of work. Application of work physiology to job design and personnel assignment is included.
PREREQUISITE: IEN 557 OR PERMISSION OF INSTRUCTOR.

IEN660 Productivity Measurement and Evaluation
3 credits
Fall Semester
Basic concepts. Productivity measurement approaches at international, national, industry, and company levels. Latest measurement models for manufacturing companies. Relationships between total and partial productivities, profit and total productivity. Productivity evaluation: theory and methodology.
PREREQUISITE: IEN 360 OR PERMISSION.

IEN661 Engineering Cost Management
3 credits
Fall Semester
Issues of cost management, including activity based costing of engineering projects. A detailed study of how to separate, identify, understand and manage the major activities performed, and how these activities relate to customer needs. Overall view of costs associated with products, processes, and customers.
PREREQUISITE: Graduate standing.

IEN662 Productivity Planning and Improvement
3 credits
Fall Semester
Planning and improvement as part of the productivity cycle. Concepts and tools. Productivity planning and improvement in manufacturing and non-manufacturing companies: technology, materials, employee, product, and task based techniques. The PIP package.
PREREQUISITE: IEN 360 OR PERMISSION.

IEN663 Project Management Techniques
3 credits
Fall Semester
Techniques and Tools in Project Management. Use of network flow techniques including PERT/CPM, planning, systems concepts, time management, conflicts, cost and resource control, tradeoff analysis.
PREREQUISITE: IEN 311 OR EQUIVALENT.
IEN664 Supply Chain Management
3 credits
Offered By Announcement Only
Supply Chain Management focuses on the flow of products, information, and money throughout the supply chain. An overview of issues, opportunities, tools, and approaches is provided. Emphasis is placed on business processes, system dynamics, control, design and re-engineering, and on the relationship between the supply chain and the company's strategic position relative to its clients and its competition. The dimensions of inter-corporate relationships with partners, including decision-making, incentives, and risk are also covered.
PREREQUISITE: IEN 465 OR PERMISSION OF INSTRUCTOR.

IEN665 Advanced Production Systems
3 credits
Spring Semester
PREREQUISITE: IEN 465 OR PERMISSION OF INSTRUCTOR.

IEN672 Strategic Management of Technological Innovation.
3 credits
Fall & Spring Semester
Advanced topics in the management of technology emphasizing the relationship between technology and competitiveness in the global marketplace. Technology development in the U.S., Japan, and Europe, industrial R & D, strategic technological planning, and conditions for successful implementations. Case studies are used with individual and group assignments. Prerequisite: IEN 572 - Management of Technology or permission of Instructor.
PREREQUISITE: IEN 572 OR PERMISSION OF INSTRUCTOR.

IEN691 Industrial Engineering Seminar
0 credit
Spring Semester
Oral presentation and discussion of current topics in Industrial Engineering.

IEN692 Industrial Engineering Seminar II
0 credit
Spring Semester
Oral presentation and discussion of current topics of Industrial Engineering.

IEN694 Master's Project
3 credits
Fall & Spring Semester
A capstone project for M.S. students in the non-thesis option.

IEN695 Special Problems
1-3 credits
Offered By Announcement Only
Research and/or design projects through an individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

IEN696 Special Problems
1-3 credits
Offered By Announcement Only
Research and/or design projects through an individual investigation. of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
IEN699 Advanced Topics
1-3 credits   Offered By Announcement Only
Subject matter offerings based upon student demand and availability of faculty.
Subtitles describing the topics to be offered will be shown in parentheses in
the printed class schedule, following the title "Advanced Topics".
PREREQUISITE: PERMISSION OF INSTRUCTOR.

IEN710 Master's Thesis
1-6 credits   Fall & Spring Semester & First & Second Summer Session
The student working on his/her master's thesis enrolls for credit, in most departments
not to exceed six, as determined by his/her advisor. Credit is not awarded until
the thesis has been accepted.

IEN720 Research in Residence
0 credit   Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master's degree
after the student has enrolled for the permissible cumulative total in IEN 710
(usually six credits). Credit not granted. May be regarded as full time residence.

IEN725 Continuous Registration--Master's Study
0 credit   Fall & Spring Semester & First & Second Summer Session
To establish residence for non-thesis master's students who are preparing for major
examinations. Credit not granted. Regarded as full time residence.

IEN730 Pre-Candidacy Doctoral Dissertation
1-12 credits   Fall & Spring Semester & First & Second Summer Session
Doctoral dissertation credits taken prior to Ph.D. student's candidacy. The student
will enroll for credit as determined by his/her advisor. Not more than 12 hours
of IEN 730 may be taken in a regular semester, nor more than six in a summer session.

IEN740 Post-Candidacy Doctoral Dissertation
1-12 credits   Fall & Spring Semester & First & Second Summer Session
Doctoral dissertation credits taken after Ph.D. student have been admitted to candidacy.
The student will enroll for credit as determined by his/her advisor. Not more than
12 credits in IEN 740 may be taken in a regular semester, nor more than six credits
in a summer session.
PREREQUISITE: ADMISSION TO CANDIDACY

IEN750 Research in Residence
0 credit   Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D. and D.A., after the student
has been enrolled for the permissible cumulative total in appropriate doctoral
research. Credit not granted. May be regarded as full-time residence as determined
by the Dean of the Graduate School.

MECHANICAL & AEROSPACE ENGINEERING
MAE501 Methods of Engineering Analysis
3 credits   Fall Semester
Analysis of engineering systems in equilibrium and motion. Examples considered
from mechanical, electrical, thermal and fluids engineering. Mathematical theory
and computer methods for obtaining numerical solutions are developed for various
cases involving discrete and continuous systems. Lecture, 3 hours.
PREREQUISITE: MAE 412, MTH 311 OR PERMISSION OF THE INSTRUCTOR.
MAE502 Vibrations
3 credits  Fall Semester
Basic theory of free and forced vibrations of mechanical systems with and without
damping. Applications to systems with one and several degrees of freedom are included.
PREREQUISITE: MAE 202, 207, 412 OR PERMISSION OF INSTRUCTOR.

MAE503 Internal Combustion Engines
3 credits  Fall Semester
Course discusses engine types, characteristics, and operation. Topics include performance
factors, fuel combustion, power cycles, knock and engine variables, exhaust emissions,
fuel metering, compressors, and turbines.
PREREQUISITE: MAE 303, SENIOR STANDING, OR PERMISSION OF INSTRUCTOR.

MAE505 Design for Manufacturability
3 credits  Offered By Announcement Only
Manufacturing concerns at design stage. Design theory and methodology. Statistical
considerations in geometric dimensioning, tolerances, reliability-based design,
and quality control. Production, design for assembly, and value engineering.
Life cycle costs and optimum design using nonlinear programming and Taguchi approaches.
Hands on projects on machine tools.
PREREQUISITE: MAE 341 AND 342 OR CONSENT OF INSTRUCTOR.

MAE506 Nuclear Engineering
3 credits  Offered By Announcement Only
Course topics include a review of neutron physics, chain reactions, reactor theory,
steady state operation, and reactor kinetics. Control, long term reactivity changes,
materials, heat transfer, and shielding are also included. Lecture, 3 hours.
PREREQUISITE: SENIOR STANDING IN MECHANICAL AND AEROSPACE ENGINEERING OR PERMISSION
OF INSTRUCTOR.

MAE507 Advanced Mechanics of Solids
3 credits  Spring Semester
Courses discusses the basic elements of elasticity, plasticity, and viscoelasticity.
Application to mechanical systems at rest and in motion are included.
PREREQUISITE: MAE 202, 207, SENIOR STANDING OR PERMISSION OF INSTRUCTOR.

MAE508 Intermediate Heat Transfer
3 credits  Spring Semester
Course discusses steady and unsteady heat transfer by conduction, convective heat
transfer in laminar and turbulent fluid flow, natural convection, and heat transfer
by radiation.
PREREQUISITE: MAE 310.

MAE509 Hydrogen Energy
3 credits  Fall Semester
Evaluation of new energy sources, need for an intermediary system, hydrogen energy
system, hydrogen as energy carrier, hydrogen production methods, hydrogen storage
and distribution, utilization of hydrogen by residential, commercial, transportation,
and industrial sectors are discussed as well as environmental, safety, and economical
considerations.
PREREQUISITE: SENIOR STANDING OR PERMISSION OF INSTRUCTOR.
MAE510 Fundamentals of Solar Energy Utilization
3 credits  Spring Semester
Fundamentals basic to the design and performance analysis of thermal systems for the capture and utilization of Solar Energy.
PREREQUISITE: MAE 303, MTH 211 AND PHY 207.

MAE511 Engineering Fracture Mechanics
3 credits  Offered By Announcement Only
Course addresses the consequence of fracture including some illustrative applications of fracture mechanics, Griffith’s fracture theory, review of relevant results from solid mechanics, the three basic modes of fracture, stress intensity factor, introduction to elasto-plastic and dynamic fracture, fatigue crack propagation, fracture and non-destructive evaluation procedures.
PREREQUISITE: MAE 207, SENIOR STANDING OR PERMISSION OF INSTRUCTOR.

MAE512 Intermediate Fluid Mechanics
3 credits  Fall Semester
Course topics include conservation of mass, momentum, and energy, potential flow, viscous laminar and turbulent flows, the Reynolds analogy, and Boundary-layer approximations. Gas dynamics are also discussed.
PREREQUISITE: MAE 309.

MAE513 Kinematics for Robotics
3 credits  Offered By Announcement Only
Geometry of unconstrained plane motion with applications to linkage design. Topics include type and number synthesis, introduction to 3-D mechanism with applications to robotics, graphical, analytical, and computer techniques, including the use of analysis software.
PREREQUISITE: MAE 202, SENIOR STANDING, OR PERMISSION OF INSTRUCTOR.

MAE514 Advanced Internal Combustion Engines Experimental Studies
3 credits  Spring Semester
Experimental mechanical engineering as it pertains to internal combustion engines. The principal measurements necessary to analyze the operation of an internal combustion engine are covered. Emphasis is placed on experiment planning, data interpretation, and error analysis.
PREREQUISITE: MAE 503 OR PERMISSION OF INSTRUCTOR.

MAE516 Introduction to Composite Materials
3 credits  Offered By Announcement Only
Course provides an introduction to composite materials and terminology. Topics include advantages offered by composite materials, current aerospace, automotive, and bio-mechanics applications, experimental results, analytical models, and effects of impact and fatigue loads. The environment’s impact on composite materials’ performance and design procedures are discussed. Case studies examining composite materials as efficient replacements are also included.
PREREQUISITE: MAE 207, SENIOR STANDING, OR PERMISSION OF INSTRUCTOR.

MAE517 CAD Applications Using Interactive Computer Graphics
3 credits  Offered By Announcement Only
Computer methods and graphics in the engineering design process. Introduction to available engineering analysis codes, principles of computer graphics, and interactive graphical methods in problem solving. Mathematics for 2-D and 3-D graphical manipulation. Programming project work is required.
PREREQUISITE: SENIOR STANDING OR PERMISSION OF INSTRUCTOR.
MAE518 Chemical and Process Engineering A
3 credits
Offered By Announcement Only
Course analyzes single and multi-stage concentration processes in the liquid-solid systems such as crystallization and drying. Processes apart from equilibrium, controlled diffusion, mathematical treatment, and equipment design are also discussed.
PREREQUISITE: MAE 310, 311. COREQUISITE: MAE 508.

MAE519 Chemical and Process Engineering B
3 credits
Offered By Announcement Only
Stagewise equilibrium separation processes in liquid-liquid systems such as distillation, rectification, absorption, and extraction. Application of phase equilibria and balance equations, mathematical treatment, and equipment design.
PREREQUISITE: MAE 310, 311, 308.

MAE520 Air Pollution
3 credits
Spring Semester
Course topics include fundamentals of air pollution, air quality, properties of air pollutants, effect of pollutants on the environment, analysis and modeling, diffusion of pollutants, and air pollution control.
PREREQUISITE: MAE 303, 309/CAE 330 OR PERMISSION OF INSTRUCTOR.

MAE521 Exhaust Emission Control
3 credits
Spring Semester
Course topics include automotive emissions, air pollution, combustion of homogeneous mixtures, emission control systems, Federal emission standards, and emission instrumentation and measurement. Lecture, 2 hours; Laboratory, 3 hours.
PREREQUISITE: SENIOR ENGINEERING STANDING OR PERMISSION OF INSTRUCTOR.

MAE528 Fuel Cells
3 credits
Spring Semester
Introduction to fuel cells, thermodynamics of fuel cells, electrochemical kinetics in fuel cells, transport phenomena in fuel cells, introduction to various types of fuel cells.
PREREQUISITE: CHM 151 AND MAE 303

MAE538 Computer-Aided Air Conditioning Design and Energy Management
3 credits
Offered By Announcement Only
Course topics include equipment and components, air conditioning system, all-air systems, air-and-water systems, all water systems, heat recovery systems, cogeneration systems, heat pump systems, central heating and cooling, energy management, and computer applications.
PREREQUISITE: MAE 405 OR 408 OR PERMISSION OF INSTRUCTOR.

MAE539 Heating, Ventilating and Air Conditioning System Design
3 credits
Fall Semester
Course topics include basic HVAC systems, multizone systems, dual-duct systems, terminal reheat systems, variable air volume systems, induction and induction reheat systems, special applications, hydronic systems, unitary and heat pump systems, hydronic heat recovery systems, cooling and heating load calculation duct and piping design, overall system design, and integration.
PREREQUISITE: MAE 405 OR 408 OR PERMISSION OF INSTRUCTOR.
MAE540 Energy Conversion
3 credits
Spring Semester
Course topics include energy conversion, utilization, present and projected consumption of energy, thermodynamic principles, nuclear energy, fission and fusion reactions, hydroelectric power, and solar energy. Alternative energy sources, the hydrogen economy, and the energy-environment-economy system are also discussed.
PREREQUISITE: SENIOR STANDING IN MECHANICAL AND AEROSPACE ENGINEERING OR PERMISSION OF INSTRUCTOR.

MAE541 Two-Phase Flow Fundamentals and Design
3 credits
Offered By Announcement Only
Course topics include two-phase flow fundamentals for thermal design, heat transfer, and pressure drop analysis of two-phase flows in tube and around tube bundles, heat transfer design correlations in boiling, evaporation, and condensation. Classifications of heat vapor generation and vapor condensation, heat exchangers for air-conditioning and refrigeration, enhancement of boiling, condensation, evaporation heat transfer, and fouling of heat exchangers are also discussed. Design examples are included.
PREREQUISITE: MAE 303 AND 310 OR PERMISSION OF INSTRUCTOR.

MAE550 Product Safety Engineering
3 credits
Offered By Announcement Only
Product safety for the designer and the design review process. Topics include hazard analysis of products including use of regulatory and voluntary standards and analytical tools such as fault tree analysis. Constraints imposed by product liability law, design techniques, and process requirements to minimize hazards are also discussed.
PREREQUISITE: SENIOR STANDING IN ENGINEERING OR PERMISSION OF INSTRUCTOR.

MAE551 Special Problems
1-3 credits
Fall & Spring Semester & First & Second Summer Session
Project course introducing methods of research through an individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

MAE552 Special Problems
1-3 credits
Fall & Spring Semester & First & Second Summer Session
Project course introducing methods of research through an individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

MAE570 Aero Propulsion
3 credits
Fall Semester
Definition of the atmosphere, propulsion basics, rocket fundamentals, turbine fundamentals, gas turbine cycles, component matching, math and computer models, aircraft missions, cycle section, reliability, and durability are analyzed.
PREREQUISITE: MAE 303, 309.

MAE571 Introduction to Aerospace Control
3 credits
Spring Semester
Course topics include modeling of Aerospace systems, properties of state space realizations, coordinate transforms solution of state equations, controllability, observability, equivalent realizations, model reduction, stability, optimal control, and estimation.
PREREQUISITE: MAE 415 OR PERMISSION OF INSTRUCTOR
MAE590 Special Topics
1-4 credits Fall Semester
Subtitles describing the topics will be shown in parentheses in the class schedule, following the "Special Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAE591 Special Topics
1-4 credits Offered By Announcement Only
Subtitles describing the topics will be shown in parentheses in the class schedule, following the "Special Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAE592 Special Topics
1-4 credits Offered By Announcement Only
Subtitles describing the topics will be shown in parentheses in the class schedule, following the "Special Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAE593 Special Topics
1-4 credits Offered By Announcement Only
Subtitles describing the topics will be shown in parentheses in the class schedule, following the "Special Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAE594 Special Topics
1-4 credits Offered By Announcement Only
Subtitles describing the topics will be shown in parentheses in the class schedule, following the "Special Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAE595 Special Topics
1-4 credits Offered By Announcement Only
Subtitles describing the topics will be shown in parentheses in the class schedule, following the "Special Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAE596 Special Topics
1-4 credits Offered By Announcement Only
Subtitles describing the topics will be shown in parentheses in the class schedule, following the "Special Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAE597 Special Topics
1-4 credits Offered By Announcement Only
Subtitles describing the topics will be shown in parentheses in the class schedule, following the "Special Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAE598 Special Topics
1-4 credits Offered By Announcement Only
Subtitles describing the topics will be shown in parentheses in the class schedule, following the "Special Topics."
PREREQUISITE: PERMISSION OF INSTRUCTOR.
MAE599 Cooperative Education
1 credit Fall & Spring Semester & First & Second Summer Session
Practical application of classroom theory through alternating semester or summer employment with industries offering positions consistent with the student's field of study. Course may be repeated. Periodic reports and conferences are required.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.

MAE601 Advanced Heat Transfer--Conduction and Radiation
3 credits Spring Semester
Advanced analytical methods of solutions of boundary value problems of steady, periodic, and unsteady heat conduction. Topics include techniques of transient point, line, and plane sources and sinks, thermodynamics of radiative equilibrium, radiative exchange, geometrical factors, network, and other methods. Lecture, 3 hours.
PREREQUISITE: MAE 508 OR PERMISSION OF INSTRUCTOR.

MAE602 Advanced Heat Transfer--Convection
3 credits Spring Semester
The analogy between heat, mass, and momentum transfers. Topics include the transfer mechanism, heat transfer to liquid metals, boiling and condensation mechanisms, heat transfer in two-phase flow, ablation heat transfer, transpiration, film cooling, and heat exchanges. Lecture, 3 hours.
PREREQUISITE: MAE 508 OR PERMISSION OF INSTRUCTOR.

MAE605 Finite Element Methods in Mechanical and Aerospace Engineering
3 credits Spring Semester
Finite-element analysis methods for static and dynamic analysis of mechanical and aerospace structures, heat transfer analysis, and fluid flow applications. Primary emphasis is placed on underlying mechanics and numerical techniques. Consideration is also given to the use of existing programs, such as ANSYS, NASTRAN and FIDAP, designing proper meshes, and choosing the proper element. A term project is included.
PREREQUISITE: MAE 501, 507 OR PERMISSION OF INSTRUCTOR.

MAE606 Experimental Methods in Fluid Mechanics
3 credits Offered By Announcement Only
Course topics include methods of flow visualization, laser techniques in measurement of wall motions, conduit compliance, Newtonian and non-Newtonian properties of fluids, measurement of unsteady flow and pressure, laser Doppler anemometry, ultrasound Doppler velocimetry, electro-magnetic flowmetry, measurement of steady and unsteady wall shear stresses and boundary layers.
PREREQUISITE: ADVANCED STANDING IN FLUID MECHANICS.

MAE610 Fluid Dynamics in Porous Media
3 credits Offered By Announcement Only
Course discusses the properties and principles of flow in porous media. Topics include groundwater flow, with reference to transpiration cooling, use of flow nets for the computation of the velocity field, and how geohydrology affects groundwater flow. Groundwater resource evaluation, groundwater contamination, and discussion of field data are included.
PREREQUISITE: MAE 512, OR CAE 630.
MAE611 Gas Dynamics
3 credits
Offered By Announcement Only
Course analyzes one-dimensional compressible flow with effects of area change, friction, heat transfer, and combustion. Supersonic diffusers, wind tunnels, compression shocks, and methods of small perturbations are also discussed.
PREREQUISITE: MAE 512.

MAE612 Viscous Fluid Flow
3 credits
Spring Semester
Course discusses derivations and exact solutions of Navier-Stokes equations, approximations at low Reynolds numbers and low Mach numbers, boundary layer theory, stability, and turbulence. Lecture, 3 hours.
PREREQUISITE: MAE 512.

MAE613 Transport Phenomena
3 credits
Offered By Announcement Only
Course topics include laws of molecular transfer, the kinetic theory explanation of molecular transfer phenomena, introduction to turbulence, and molecular transfer in laminar and turbulent flows with experimental results. A unified treatment of salient aspects of momentum, heat, and mass transfer including the relationship between rate and conservation equations are also discussed.
PREREQUISITE: MAE 309, MTH 311 OR PERMISSION OF INSTRUCTOR.

MAE614 Computational Fluid Dynamics
3 credits
Spring Semester
Incompressible flow equations in rectangular co-ordinates. Topics include basic computational methods for incompressible flow, three dimensional flows, compressible flow equations in rectangular coordinates, basic computational methods for compressible flows, treatment of shocks, artificial viscosities, convergence, other mesh systems, programming, testing, and information processing.
PREREQUISITE: MAE 512.

MAE615 Turbulence
3 credits
Offered By Announcement Only
The nature and origin of turbulence. Topics include turbulent transport of momentum and heat, dynamics of turbulence, Boundary-free shear flows, Wall-Bounded shear flows, statistical description of turbulence, turbulent transport, Spectra dynamics, and methods and techniques of measurements in turbulent flows.
PREREQUISITE: MAE 512.

MAE620 Linear Robust Control
3 credits
Offered By Announcement Only
Analysis of multivariable systems in the frequency domain. Topics include norms on signals and systems, uncertainty models, closed loop transfer matrices for performer specifications, role of weighting matrices, and synthesis of Robust controllers in State-Space.
PREREQUISITE: EEN 518 OR PERMISSION OF INSTRUCTOR.
MAE625 Advanced Aerospace Structures
3 credits
Offered By Announcement Only
Elastic analysis of aerospace structures. Topics include failure modes and criteria, buckling, matrix methods for analysis, plane truss design, Energy and Castigliano methods for statically indeterminate structures, and torsion and bending of asymmetrical thin-walled open and closed sections. The use of computer packages to solve moderately sized problems of analysis and design of trusses, plane frames, torsion, plane stress, and combinations structures is also included.
PREREQUISITE: MAE 470 OR 507 OR PERMISSION OF INSTRUCTOR.

MAE630 Mechanical Systems Optimization
3 credits
Spring Semester
Optimization as an element of the engineering design process. Topics include comparative examination of unconstrained algorithms, as well as development and application of methods for constrained optimization problems. Case studies which demonstrate the theory and application of mathematical programming as a design tool are also included.
PREREQUISITE: MAE 501 OR PERMISSION OF INSTRUCTOR.

MAE635 Expert Systems in Mechanical and Aerospace Engineering
3 credits
Offered By Announcement Only
Application of artificial intelligence techniques to problem solving in Mechanical Engineering. Coverage of AI programming languages and paradigms, expert systems technology, as well as applications of expert system to the processes of design, operations, maintenance, and simulation are included.
PREREQUISITE: MAE 501 OR PERMISSION OF INSTRUCTOR.

MAE640 Continuum Mechanics
3 credits
Fall Semester
Course discusses concepts that are common to all continuous media. Topics include elements of tensor analysis, motion, deformation, vorticity, material derivatives, mass and the continuity equation, and balance of linear and angular momentum as well as energy. Stress and its geometric characterization, constitutive equations of solid and fluid type behavior, virtual work, fundamental applications, and the Clausius-Duhem inequality are also covered.
PREREQUISITE: MAE 507 OR 512 OR PERMISSION OF THE INSTRUCTOR.

MAE641 Vibration of Continuous Systems
3 credits
Offered By Announcement Only
PREREQUISITE: MAE 502 OR CONSENT OF INSTRUCTOR.

MAE651 Master's Project
3 credits
Fall & Spring Semester & First & Second Summer Session
A required project for M.S. students in the non-thesis option.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAE652 Master's Capstone Project
4 credits
Fall & Spring Semester & First & Second Summer Session
A required project for the five year BSME/MSME program.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
MAE680 Graduate Colloquium
0 credit    Fall & Spring Semester
Presentations by selected speakers of weekly programs dealing with topics of interest in Mechanical Engineering. Attendance is required of all students registered in Mechanical Engineering graduate programs.
PREREQUISITE: GRADUATE STANDING.

MAE692 Special Problems
1-3 credits  Fall & Spring Semester & First & Second Summer Session
Research and/or design projects consisting of individual investigation of current problems. Offered by special arrangement only.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAE697 Advanced Topics
1-3 credits  Offered By Announcement Only
Subject matter offerings based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title "Advanced Topics".
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAE698 Advanced Topics
1-3 credits  Offered By Announcement Only
Subject matter offerings based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title "Advanced Topics".
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAE710 Master's Thesis
1-6 credits  Fall & Spring Semester & First & Second Summer Session
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

MAE720 Research in Residence
0 credit    Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in MAE 710 (usually six credits). Credit not granted. May be regarded as full time residence.

MAE725 Continuous Registration--Master's Study
0 credit    Fall Semester

MAE730 Pre-Candidacy Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Doctoral dissertation credits taken prior to Ph.D. student's candidacy. The student will enroll for credit as determined by his/her advisor. Not more than 12 hours of MAE 730 may be taken in a regular semester, nor more than six in a summer session.

MAE740 Post-Candidacy Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Doctoral dissertation credits taken after Ph.D. student has been admitted to candidacy. The student will enroll for credit as determined by his/her advisor. Not more than 12 credits in MAE 740 may be taken in a regular semester, nor more than six credits in a summer session.
PREREQUISITE: ADMISSION TO CANDIDACY
MAE750 Research in Residence

0 credit  Fall & Spring Semester & First & Second Summer Session

Used to establish research in residence for the Ph.D. and D.A., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.
IDS500 Research Methods and Topics  
4 credits  Fall & Spring Semester & First & Second Summer Session  
Disciplined laboratory experiences for selected undergraduate students placed in various laboratories on the medical, main and marine campuses under the mentorship of faculty researchers. Includes a series of class lectures and demonstrations of scientific equipment.  
PREREQUISITE: PERMISSION OF PROGRAM DIRECTOR.

IDS699 Directed Study  
1-6 credits  Fall & Spring Semester & First & Second Summer Session  
PREREQUISITE: APPROVAL OF THE DEAN OF THE GRADUATE SCHOOL

IDS715 Research Activities  
0 credit  Fall & Spring Semester & First & Second Summer Session  
Students conducting research, practica, field experience or special projects as part of their graduate experience. Regarded as full-time residence. May be repeated.  
PREREQUISITE: PERMISSION OF THE PROGRAM DIRECTOR.

IDS725 Master Study  
1-6 credits  Spring Semester & Second Summer Session  
PREREQUISITE: NONE

IDS730 Doctoral Dissertation for IDS students  
1-12 credits  Fall & Spring Semester  
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor but not for less than a total of 24. Not more than 12 hours of IDS 730 may be taken in a regular semester, nor more than six in a summer session. Where a student has passed his/her (a) qualifying examinations, and (b) is engaged in an assistantship, he/she may still take the maximum allowable credit stated above.

IDS740 Post-Candidacy Dissertation  
0 credit  Fall Semester & Second Summer Session

IDS750 Dissertation: Research and Residency  
0 credit  Fall & Spring Semester & First & Second Summer Session  
Used to establish research in residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

RESEARCH TRAINING

RST501 Responsible Conduct of Research  
0 credit  Fall & Spring Semester  
Online research ethics training via CITI Program Responsible Conduct of Research course.

RST502 Responsible Conduct of Research  
0 credit  Fall & Spring Semester  
Research ethics training via Ethics Programs Responsible Conduct of Research classroom course.
RST720 Research Ethics

Course focuses on topics related to what is sometimes called the "responsible conduct of research" (RCR). It covers the landscape of "scientific integrity" - both the principles and day-to-day practicalities of research ethics. The course is inter-disciplinary in its approach. Readings and other materials used as part of the course draw on the examples from many academic fields, and are intended to have application to any academic or professional area of study in which research is conducted.
AMP509 Coastal Physics and Engineering  
3 credits Spring Semester  
Course addresses linear wave theory, wave statistics, wave generation, tides, wind-driven currents, near shore circulation, sediment transport by waves and currents, bedforms, bedload, and suspended load. Other topics include long shore and cross-shore transport, equilibrium beach profiles, coastal processes models, Peirce-Considine model for shoreline change, and Escoffier model for inlet stability.  
PREREQUISITE: CAE 330 OR AMP 575.

AMP531 Ocean Measurements  
3 credits Spring Semester  
Course topics include instrumentation, automatic data acquisition and analysis, time series analysis, signals and noise, filtering, and applied statistics.  
PREREQUISITE: MTH 311.

AMP535 Introduction to Underwater Acoustics  
3 credits Spring Semester  
Course topics include sound waves and pulses, harmonic analysis, sound propagation in the ocean, sonar systems, scattering and absorption, acoustic measurement of marine life and sea-floor properties, sound transmission in waveguides, ambient noise, transducers, and hydrophones.  
PREREQUISITE: MTH 311.

AMP551 Special Topics  
1-3 credits Offered By Announcement Only  
Lectures, research projects or directed readings in special topics related to Applied Marine Physics.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

AMP553 Special Topics  
1-3 credits Offered By Announcement Only  
Lectures, research projects or directed readings in special topics related to Applied Marine Physics.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

AMP554 Special Topics  
1-3 credits Offered By Announcement Only  
Lectures, research projects or directed readings in special topics related to Applied Marine Physics.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

AMP575 Applied Ocean Hydrodynamics  
3 credits Fall Semester  
The equations governing the dynamics of homogeneous fluids are derived. The concepts of deformation rates, vorticity, stream function, and ideal fluid flow are introduced and demonstrated in applications describing flows in the marine environment. Semi-empirical methods for analyzing viscous flows, boundary layers, and turbulence are presented. Eddy viscosity and more advanced turbulence closure schemes are discussed in the context of coastal circulation, bottom boundary layers and sediment transport.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.
AMP576 Wave Propagation in the Ocean Environment

3 credits

Wave equation models, acoustic and other elastic waves, surface gravity waves, boundary conditions, ray tracing, dispersion, diffraction, reflection attenuation, and radiation transport laws are discussed.

PREREQUISITE: MTH 311.

AMP590 Sustainable Fisheries - Assessment and Conservation

3 credits

This is the second of a three course series. This course will focus on advanced stock assessment techniques using acoustics and optics. It will cover, for example:
- History of sampling fish stocks - "from catching to measuring fish" - Measuring with underwater sound and light - Sounds and echoes in marine ecosystem - Survey of fish stocks and their habitat.

PREREQUISITE: MSC 471, OR EQUIVALENT.

AMP601 Analytical Methods in Marine Physics

3 credits


PREREQUISITE: CONSENT OF INSTRUCTOR.

AMP610 Environmental Optics and Electromagnetic Wave Propagation

3 credits

The course will allow students to understand the physical background of geophysical optical and microwave measurements, to learn how to carry out and interpret optical measurements, and how to work with microwave passive/active remote sensing platforms. The student will leave with a thorough understanding of existing physical background of optical instrumentation for underwater measurements as well as active/passive optical and microwave remote sensing.

PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

AMP631 Air-Sea Interaction

3 credits

Course topics include the flux of momentum, heat, moisture, and salt, vertical distribution of energy sources and sinks near the interface, surface waves, mixed layers, and large scale interactions. (Same as MPO 631.)

PREREQUISITE: AMP 575 OR 576 AND PERMISSION OF INSTRUCTOR.

AMP640 Numerical Modeling in Applied Marine Physics

3 credits

Techniques and applications of numerical modeling in one of the following topical areas: sound propagation and scattering in the ocean; surface gravity wave propagation and scattering in regions of shallow and intermediate depths; and hydrodynamics in the coastal ocean environment. Emphasis (sound propagation versus gravity wave propagation or hydrodynamics) alternates from one year to the other.

PREREQUISITE: AMP 535, 575 OR 576 AND PERMISSION OF INSTRUCTOR.
AMP650 Coastal Ocean Circulation
3 credits  Spring Semester
Circulation and stratification in the coastal ocean, including the dynamics of wind-driven, tidally-driven, and buoyancy-driven mean and transient flows over variable topography with density stratification. Design of numerical models and observing systems for coastal ocean circulation is also included.
PREREQUISITE: MPO 503, 511 OR AMP 575, AND 601 OR EQUIVALENT, CONSENT OF INSTRUCTOR.

AMP672 Advanced Underwater Acoustics
3 credits  Spring Semester
Analysis and numerical modeling of sound propagation in the ocean: geometrical acoustics, normal mode theory, and the parabolic equation method. Recent advances in underwater acoustics: effects of oceanic variability, signal fluctuations, random medium propagation, ocean bottom interactions, and shallow water propagation are also examined.
PREREQUISITE: AMP 535.

AMP690 Mechanics and Thermodynamics of the Air-Sea Interface
3 credits  Spring Semester
This course deals with the theory and practice of air-sea interaction. Two hours of lectures and one hour in the wind-wave laboratory provide an appropriate mix of theory and experiment. The topics covered include: thermodynamics of the interface; conservation equations; wave generation, propagation, and dissipation; boundary layer turbulence; heat, mass, and momentum transfer; energy dissipation, intermittency; turbulence closure; and wave prediction models.
PREREQUISITE: AMP 575 OR PERMISSION OF INSTRUCTOR.

AMP691 Sustainable Fisheries - Advanced Acoustic Surveying
3 credits  Spring Semester
This is the third and final course in the three course series. It addresses graduate students with a strong research interest in measuring fish and their habitat on the stock and population level. This course will focus on advanced stock assessment techniques using acoustics and optics. It will cover, for example: - A critical review of classical and current research papers - Signal processing and laboratory experiments - Field surveys and stock assessment reports.
PREREQUISITE: AMP/MBF 590.

AMP694 Advanced Studies
1- 3 credits  Offered By Announcement Only
Supervised study in areas of special interest to graduate students.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

AMP698 Advanced Studies
1- 3 credits  Offered By Announcement Only
Supervised study in areas of special interest to graduate students.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

AMP700 Practical Training and Internship
1- 6 credits  Offered By Announcement Only
Supervised internships or off-campus employment for students pursuing the M.A., M.S., or Ph.D. degree. Consists of work related to research in progress.
AMP705 Special Project
1-6 credits  Fall & Spring Semester & First & Second Summer Session
Supervised project for students pursuing the Master of Arts degree. Consists of a paper which is researched and written on a topic approved by the student's advisory committee, and presented as a seminar to the student's division. Six credits are required for graduation.
PREREQUISITE: COMPLETION OF 24 GRADUATE COURSE CREDITS.

AMP710 Master's Thesis
1-6 credits  Fall & Spring Semester & First & Second Summer Session
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

AMP715 Master's Thesis-Post Candidacy
1-6 credits  Fall & Spring Semester & First & Second Summer Session
Used to establish student has been admitted to candidacy for the MS degree. The student working on his/her Master's Thesis enrolls for credit not to exceed 6 combined with 710. Credit is not awarded until the Thesis has been accepted.

AMP720 Research in Residence
0 credit                     Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in AMP 710 (usually six credits). Credit not granted. May be regarded as full time residence.

AMP730 Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor but not for less than a total of 12. Not more than 12 hours of AMP 730 may be taken in a regular semester, nor more than six in a summer session. Where a student has passed his/her (a) qualifying examinations, and (b) is engaged in an assistantship, he/she may still take the maximum allowable credit stated above.

AMP750 Research in Residence
0 credit                     Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

MARINE AFFAIRS & POLICY
MAF501 Political Ecology of Marine Management
3 credits  Spring Semester
Course provides grounding in political ecology as an important theoretical approach to resource policy and management. The social analysis of resource use, social change, and development are discussed. Models of development and concepts of nature relate to resource use and policy formation are also included. Within this framework, ethnicity, class, and the politics of conservation are explored.
PREREQUISITE: MAF 505.
MAF502 Economics of Natural Resources
3 credits Fall Semester
Course brings together the approaches of natural resource and environmental economics to provide a comprehensive overview of the economics of national, international, and global environmental problems. A unifying theme throughout the course is the concept of sustainable development, defined as maximizing the net benefit to economic development while maintaining the services and quality of natural resources over time. Economic reasoning is used to examine the causes and consequences of environmental and resource problems and measures for dealing with them.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAF503 Marine Resource Economics
3 credits Offered By Announcement Only
This course surveys the economics of international and global marine resource problems, with particular emphasis on biodiversity loss and climate change. The mainstream economics focus on efficiency--getting the most welfare out a given endowment of resources--in complemented with a range of social science and natural science interdisciplinary linkages. Three themes stand out. First, economic efficiency may not be the only or even dominant concern in the provision of environmental assets. Issues of fairness and access to those assets, both within a time frame period and over time, may be of greater importance to both individuals and societies. Second, if habitats and their non-human occupants have some form of "intrinsic" value unrelated to human preferences, then we face the problem of how to account for those values. Third, economics lacks a "sustainability" theorem that would ensure whatever economy we might devise would be ecologically sustainable. To be sure of sustainability, economic models must have sustainability conditions build into them.
PREREQUISITE: MAF 502, ECO 345, OR PERMISSION OF INSTRUCTOR.

MAF504 Fieldwork in Coastal Management
3 credits Spring Semester
The field portion of this course will occur in Bocas del Toro, Panama, on the northwest Caribbean coast of Panama where the University of Miami has been involved in the development of a Coastal Management plan since 2004. The Bocas del Toro Archipelago of over 20 near shore islands boasts a rich diversity of cultures, as well as high quality coastal environments. The region is currently experiencing rapid tourist growth, as well as residential development projects for foreigners. The cultural and biological diversities of the region, as well as the development pressures they face, provide an excellent opportunity to study the socio-economic and environmental impacts of tourist development; regional attempts to create land use and coastal plans; conflicts among different uses and users; and various cultural perspectives on the current and evolving situation. The course allows students to develop projects tailored to their interests and skills.
PREREQUISITE: MAF 518 IS HIGHLY RECOMMENDED

MAF505 Fieldwork in Coastal Cultures
3 credits Spring Semester
Field course in which the student participates in a social and economic analysis of a coastal culture (i.e., stone crab fishermen in Everglades City, spiny lobster fishermen in Key West, boat builders and commercial divers in the Abacos, Bahamas). Preliminary lectures and reading introduce the theory and method which the student then practices during a week-long field trip.
PREREQUISITE: MSC 310 OR PERMISSION OF INSTRUCTOR.
MAF506 Advance Fieldwork in Coastal Cultures
3 credits  
Spring Semester
Advanced field course in which the students participate in the social and economic analysis of a coastal culture (e.g. Louisiana bayou fishermen, Abacos boat builders, Tarpon Spring spongers). Students utilize field research techniques learned in MAF 505 and develop skills in framing a research problem. Students examine a coastal issue from an anthropological perspective, structuring a field research paper.
PREREQUISITE: MAF 505.

MAF510 Environmental Planning and the Environmental Impact Statement
3 credits  
Spring Semester
Course takes a broad view of environmental planning and analysis while focusing specifically on the preparation of environmental impact statements. Statutory requirements and procedures at the federal level are examined. Judicial opinions are studied that reflect environmental disputes and controversies. The course also considers some of the substantive requirements of environmental impact analyses such as the assessment of physical and biological environment and socioeconomic impacts.

MAF512 Aquaculture Management
3 credits  
Fall Semester
Course examines the various strategies of resource exploitation and utilization in developing aquaculture projects. Resources include environmental, technological, social, economical, and administrative aspects encountered in commercial aquaculture development. The course covers all stages of planning and development, with emphasis on determining the technical and economic feasibility of aquaculture projects.

MAF513 Aquaculture Management II
3 credits  
Spring Semester
Course is a complement to Aquaculture Management (MAF 512) and examines advanced aquaculture management techniques and strategies with emphasis on commercial operations. Course requires a background in either aquaculture or business. Prerequisite: MAF 512 or permission of instructor.
PREREQUISITE: MAF 512 OR PERMISSION OF INSTRUCTOR.

MAF514 Field Techniques in Prehistoric Underwater Archaeological Excavation
3 credits  
First Summer Session
An introduction to specialized techniques of underwater excavation applicable to the excavation of Little Salt Spring (LSS), a prehistoric site owned and operated by Rosenstiel School of Marine and Atmospheric Science. All students participate in a one-week intensive lecture course in the prehistory of Florida and general techniques of underwater excavation. The field course begins after that. All students must be present for the entire field course in order to complete the basic requirements. Activities include daily underwater excavation in depths of 10-30 feet of water, as well as surface support activities relating to diving and the recording and basic conservation of recovered ecofacts and artifacts dating before 9,000 radiocarbon years before present.
PREREQUISITE: STUDENTS WHO INTEND TO DIVE (NOT REQUIRED) MUST HAVE ALREADY BEEN QUALIFIED AS RSMAS SCIENTIFIC DIVERS (BASIC), UNDER GUIDELINES ESTABLISHED BY THE AMERICAN ACADEMY OF UNDERWATER SCIENCES (AAUS) IN ORDER TO PARTICIPATE IN COURSE-RELATED SCUBA-DIVING ACTIVITIES.
MAF515 Techniques of Marine Archaeological Survey and Recording
3 credits
Offered By Announcement Only
The location and study of underwater archaeological sites is undergoing fundamental changes because of application of advanced technologies developed for other fields, notably remote sensing, and the general availability of computer power for individual users. This course introduces the student to the latest techniques of survey and recording, focusing on hardware and software that can greatly increase the efficiency of any underwater excavation.
PREREQUISITE: PREVIOUS COURSES IN ARCHAEOLOGY OR MARINE ARCHAEOLOGY OR PERMISSION OF INSTRUCTOR.

MAF516 Ocean Policy and Development and Analysis
3 credits
Fall Semester
Ocean policy development and analysis of issues such as: offshore oil drilling, fisheries resource conflicts, marine mammal protection, ocean dumping and incineration, multiple use conflicts in marine protected areas, pollution from land based sources, and oil spill contingency planning.

MAF517 Aquaculture and the Law
3 credits
Offered By Announcement Only
This course examines the substantive legal issues concerning Aquaculture and the Coastal Zone. Legal aspects of Aquaculture related to ownership and boundaries in the coastal zone, legal and regulatory constraints, international consideration private and public rights, risks and incentives. Fish and shellfish as personal property and conservation laws affecting the fish farmer.

MAF518 Coastal Zone Management
3 credits
Fall Semester
Development of a framework for formulation and assessment of coastal zone policy. Analysis of issues and conflicts in coastal zone management (CZM), such as: zoning and planning, coastal and beach protection, ecosystem protection, the federal flood insurance program, adaptations to sea level rise, coastal pollution from land-based sources, and tourism impacts.

MAF519 Aquaculture Management III (Fieldwork)
3 credits
First Summer Session
Students will conduct fieldwork on environmental, technological, social, economical, and administrative aspects encountered in commercial aquaculture operations. This field course will complement Aquaculture Management I and II. Students will be able to apply most of the topics taught in MAF 512 and MAF 513. They will participate in all stages of the production process, including maturation, spawning, larval husbandry, nursery and grow out techniques, as well as harvesting, processing and exporting. Students will visit several large commercial hatcheries, farms and processing plants currently producing processing, packing and exporting shrimp and fish (both marine and freshwater) for US and European and Asian markets.
PREREQUISITE: MAF 512, 513 OR PERMISSION FROM THE INSTRUCTOR.

MAF520 Environmental Law
3 credits
Fall Semester
An introductory course focusing on environmental problems. The study of Regulatory legislation, common law, and administrative law. Topics include toxic substances, air and water pollution, and habitat and species protection.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
MAF525 Fisheries Socioeconomics and Management
3 credits  Fall Semester
This course applies microeconomic theory to fisheries resource problems and policies. Economic models with the value of production as their objective, will contrast economists' and biologists' definitions of maximum yield and show why an unregulated fishery will not operate at either level. We will use economic reasoning to examine causes and consequences of fisheries problems and measures for dealing with them.

MAF526 Marine Cultural Resource Management
3 credits  Spring Semester
Submerged archaeological sites as exhaustible resources of a country's cultural heritage. Policies and procedures for their protection or mitigation will be surveyed using as examples the statutes and regulations of foreign states, the federal government, and the US states.
PREREQUISITE: APY 340.

MAF530 Port Operations and Policy
3 credits  Offered By Announcement Only
The course will include: Introduction to ports; port geography; port operations; port administration; Federal port policy; free ports/free zones; port investment/tariffs; port marketing; Coastal Zone Management and ports; case studies, CZM; fostering economic development; and Port planning and development.
PREREQUISITE: JUNIOR STANDING.

MAF560 Introduction to Marine Geographic Information Systems
3 credits  Fall Semester
Marine Geographic Information Systems are emerging as a distinct subset of GIS, due to fundamental differences between terrestrial and underwater spatial information (2-D vs. 3-D, multiresolution, synoptic data collection, time depth (4-D) modeling). Approximately the first half of this course is a brief review of basic GIS, and the second half concentrates on aspects of marine data acquisition and manipulation in the GIS context.

MAF561 Introduction to Marine Geographic Information Systems - Laboratory
0 credit  Fall Semester & First Summer Session
Introduction to Marine Geographic Information Systems - Laboratory introduces students the basic methods and technology in Marine Geographic Information Systems. The course is taught with hands-on laboratory exercises following the evolution of Marine Geographic Information Systems, from basic cartography to topological and network modeling to internet access and application.

MAF562 Spatial Analysis: Intermediate Course in Marine GIS
3 credits  Spring Semester
Course provides a general survey of available quantitative methods for spatial analysis using Geographic Information Systems (GIS). Although GIS has been widely used for mapping and database management, this course is focused on the functionality of GIS as an effective tool for modeling and analyzing complex spatial relationships. Quantitative methods suitable for analyzing different features types are discussed. Applications for such methods are also presented.
PREREQUISITE: MAF 560, 561 OR PERMISSION OF THE INSTRUCTOR.
MAF570 Conservation and Management of Marine Mammals
3 credits Spring Semester
This course emphasizes on the notion that proper conservation and management of large marine vertebrates (i.e., marine mammals, sea turtles, sharks and rays) require the understanding and integration of some important aspects of the (comparative) biology and ecology of these groups of animals with the multifaceted nature (e.g., social, economical, ethical and cultural dimensions) of these concerns.
PREREQUISITE: JUNIOR STANDING

MAF576 Special Topics
1-4 credits Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to marine affairs.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAF577 Special Topics
1-4 credits Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to marine affairs. Prerequisite: Permission of instructor.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAF578 Special Topics
1-4 credits Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to marine affairs.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAF579 Special Topics
1-4 credits Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to marine affairs.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAF580 Special Topics
1-4 credits Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to marine affairs.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAF610 International Ocean Law
3 credits Spring Semester
Course analyses how international and municipal law deals with navigation, pollution, fisheries, exploitation of natural resources, and other uses of the ocean. In addition to jurisdictional issues, sources of international law and scientific research in ocean areas are examined.

MAF620 Coastal Law and Policy
3 credits Fall Semester
Course examines the authority of different levels and agencies of government to make decisions affecting the coastal zone. Course also explores the coastal problems of shoreline use and development, uses of water areas and the seabed, and the related questions of environmental protection.
MAF670 Advanced Studies
1-4 credits  Offered By Announcement Only
Supervised study in areas of special interest to graduate students.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAF671 Advanced Studies
1-4 credits  Offered By Announcement Only
Supervised study in areas of special interest to graduate students.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAF672 Advanced Studies
1-4 credits  Offered By Announcement Only
Supervised study in areas of special interest to graduate students.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAF673 Advanced Studies
1-4 credits  Offered By Announcement Only
Supervised study in areas of special interest to graduate students.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAF674 Advanced Studies
1-4 credits  Offered By Announcement Only
Supervised study in areas of special interest to graduate students.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAF705 M.A. Internship
1-6 credits  Fall & Spring Semester & First & Second Summer Session
The M.A. student must complete an approved six credit internship with an organization engaged in activities associated with marine affairs. Credits are not awarded until the internship has been successfully completed, a written report approved and a formal letter of evaluation received from the cooperating institution.
PREREQUISITE: COMPLETION OF ALL OTHER REQUIREMENTS FOR M.A. DEGREE IN MARINE AFFAIRS.

MAF710 Master's Thesis
1-6 credits  Fall & Spring Semester & First & Second Summer Session
The student working on his/her master's thesis enrolls for credit in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

MAF720 Research in Residence
0 credit  Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in MAF 710 (usually six credits). Credit not granted. May be regarded as full time residence.

MAF725 Continuous Registration--Master's Study
0 credit  Fall & Spring Semester & First & Second Summer Session
To establish residence for non-thesis master's students who are preparing for major examinations. Credit not granted. Regarded as full time residence.

MARINE BIOLOGY & FISHERIES
MBF504 Biology of Marine Mammals
3 credits  Fall Semester
The purpose of this class is to introduce students to the biology, evolution, taxonomy, physiology, natural history, behavior, conservation, and management of marine mammals.
PREREQUISITE: ONE-YEAR OF GENERAL BIOLOGY.
MBF505 Marine Mammal Disease and Medicine

3 credits

Spring Semester

This course will cover the basics (theory and application) of marine mammal disease and medicine. Applications will focus on the medical management of managed care and wild populations.

PREREQUISITE: PREFERENCE WILL BE GIVEN TO MPS STUDENTS

MBF507 Marine Mammal Applied Behavior Analysis and Managed Care

3 credits

Fall Semester

This course involves a thorough examination of specific aspects of marine mammal managed care and conservation programs, with an emphasis on behavior management, analysis, and modification as a basis for adaptive response to changing environments both in-situ and ex-situ. Coursework will also focus on health management and assessment, emergency handling and transportation, government regulations, and wildlife conservation.

MBF508 Biometrics in Marine Science

3 credits

Fall Semester

Applied statistical analysis in marine biology and biological oceanography. Descriptive statistics, probability distributions, and hypothesis testing are discussed. Concepts of analysis of variance, simple linear regression, and computer statistical distribution-free methods are also included as well as principles and procedures with computer statistical packages for data analysis. Lecture and laboratory.

PREREQUISITE: PERMISSION OF INSTRUCTOR.

MBF511 Aquaculture

3 credits

Offered By Announcement Only

Focus on techniques to culture marine organisms. The growth and physiology of early life stages, the culture of food organisms for larval stages, food requirements of larval and juvenile stages, water quality measurement, disease control, tank design, grow out, composition of artificial feeds and artificial spawning are discussed in detail. Applications of these techniques in commercial aquaculture, culture of animals for research, and for stock enhancement programs are examined. Practical examples are presented for laboratory and hands on rearing of fish larvae. Commercial aquaculture facilities are visited in field trips during the laboratory. Lecture, 2 hours; laboratory, 2 hours.

MBF512 Aquaculture Laboratory

2 credits

Offered By Announcement Only

Determining and monitoring water quality, culturing food organisms, larval rearing of shrimp and fish, feeding techniques, identifying parasites and diseases, and avoiding causes of mortality are discussed. Visits to local fish and shrimp hatcheries and farms is included. Corequisite: MBF 511.

PREREQUISITE: COREQUISITE MBF 511.

MBF513 Biology and Ecology of Mangroves

3 credits

Spring Semester

Recent research advances in the study of mangroves as a dynamic interface between terrestrial and marine systems. Topics include taxonomy, biogeography, morphology and physiognomy, water relations and mineral nutrition, and physiology and reproduction with emphasis on how mangroves modify tropical coastal environments and how they are affected by external stressors including global climate change. Lecture, 2 hours; field trips, 1 hour; field and laboratory work, minimum 2 hours.

PREREQUISITE: PERMISSION OF INSTRUCTOR.
**MBF514 Tropical Marine Biology: A Field Course**

3 credits  
Spring Semester  
General survey of marine flora and fauna of tropical marine ecosystems. Inhabitants and communities of the sandy shore, rocky shore, seagrass meadows, mangrove shoreline, coral and artificial reefs are collected, identified, maintained. Life histories of representatives are presented. Concepts of island biology and geology such as shore zonation local reef formation and the geological history of the lagoon are also discussed. The 10 day course involves 90 contact hours and approximately 40 hours of formal lectures. Grades are based on a laboratory practicum and written final exam. The course is given in its entirety at the University's field station at Bimini, Bahamas.  
PREREQUISITE: BY PERMISSION OF INSTRUCTOR.

**MBF515 Tropical Marine Ecology**

3 credits  
Offered By Announcement Only  
Marine ecology with emphasis on tropical ecosystems and local habitats. Physical environmental and biotic adaptations, population, and community ecology are discussed. Field exercises in mangrove, sea grass, and coral reef ecosystems are also included.  
PREREQUISITE: INVERTEBRATE ZOOLOGY AND ECOLOGY OR PERMISSION OF INSTRUCTOR.

**MBF518 Ecology and Physiology of Coral Reef Systems**

3 credits  
Offered By Announcement Only  
Coral reefs as integrated systems are examined from geological, ecological, and biological perspectives. The roles of global and local environmental fluctuations, physical disturbance, and biotic interactions in controlling reef formation and community structure is emphasized. The physiology of scleractinian corals and their algal symbionts is described and the prevalence of algal-invertebrate symbiosis on coral reefs related to nutrient cycling, productivity, and food webs on coral reefs.  
PREREQUISITE: PERMISSION OF INSTRUCTORS.

**MBF519 Tropical Marine Ecology Lab**

1 credit  
Offered By Announcement Only  
Combined field-laboratory exercises in mangrove, sea grass, and coral reef ecosystems.

**MBF520 Tropical Marine Ecology: A Short Course**

2 credits  
Spring Semester  
This tropical Marine Biology course established primarily for Florida high school marine biology teachers is taught from an interactive point of view where students are afforded the opportunity to both learn in the conventional way of classroom lectures, and more importantly to learn by involvement and participation. Students are exposed to the major marine communities found in Bimini and South Florida such as: 1) coral reef; 2) artificial reef; 3) mangrove; 4) seagrass flats; and intertidal zones. Students learn about the uniqueness of each of these ecosystems and the plants and animals which inhabit them. Lectures are divided up by habitat and are given in the morning. In the afternoon students go into the field and traverse on foot or snorkel in each ecosystem. Specimens are collected and identified at night and students are required to learn and identify 50 organisms found in six ecosystems. Field guides are used as reference material. A written exam and laboratory practical is given on the last day of class.  
PREREQUISITE: COLLEGE BIOLOGY.
MBF521 Field Techniques and Instrumentation in Tropical Marine Ecology  
3 credits  
Spring Semester  
This course covers the instrumentation and field techniques commonly used to characterize 
the structure and function of the three dominant ecosystems in the tropics and 
subtropics, i.e. coral reefs, seagrass beds and mangroves.  
PREREQUISITE: MPS STATUS/PREFERENCE WILL BE GIVEN TO MPS STUDENTS

MBF525 Biology of Elasmobranch Fishes: A Field Course  
2 credits  
Offered By Announcement Only  
Course discusses the first aspects of elasmobranch biology including systematics 
of the major taxa, paleontology, and the evolutionary history of sharks as well 
as anatomical aspects. Course also addresses the physiology and biochemistry of 
sharks, circulatory, respiratory, developmental, skeletal, and sensory systems 
involving behavior, ecology, and life history strategies. Factors such as feeding, 
reproduction, and social and swimming behavior are also discussed. The relation 
between man and shark: overexploitation as it affects shark conservation, survival, 
and biodiversity is included. Course is given in its entirety at Bimini, Bahamas.  
PREREQUISITE: By permission of instructor.

MBF531 Plankton  
3 credits  
Spring Semester  
Course topics include the drifting organisms, their central role in the economy 
of the sea, the influence of the environment, and their adaptations to it. The 
dynamic and productivity of the plant and animal plankton, the ecology and physiology 
of animal plankton, especially in connection with special distribution and nutrition, 
and an introduction to the taxonomy, and quantitative enumeration of the animal 
plankton is included. Lecture, 3 hours.  
PREREQUISITE: PERMISSION OF THE INSTRUCTOR

MBF539 Oceanic Productivity  
3 credits  
Spring Semester  
History, methods, and current topics relevant to studies of marine primary production. 
Magnitude and fate of primary production in the sea is essential to understand 
secondary production, the success of fisheries recruitment, and global climate.

MBF540 Introduction to Ecological Modeling  
3 credits  
Offered By Announcement Only  
An introduction to conceptual and mathematical model building methods for ecological 
processes at population, community, ecosystem, and landscape/seascape- level scales. 
Other topics include mathematical foundations, numerical modeling, holistic and 
structured population models, and demography, density-independent and -dependent 
models, linear and nonlinear systems, community composition, competition, succession, 
and ecosystem structure and function are discussed. Gap-phase, process-based, compartmental, 
and coupled biological-physical ecosystem models at landscape scales are also examined.  
PREREQUISITE: CALCULUS AND PERMISSION OF INSTRUCTOR
MBF542 Oceans and Human Health
3 credits
Fall Semester
The objective of this interdisciplinary course is to provide students with introductory knowledge of the broad and relatively young field of Oceans and Human Health. The focus is the present, future, and potential effects of oceanic processes and aquatic organisms on human health, and vice versa. These diverse factors reflect the physical, chemical, biotic and social processes which require an integration of information and knowledge from the medical, marine and social sciences. The course covers harmful algal blooms, marine microbes, and global climate change as well as an overview of coastal impacts and remedies (e.g. drugs from the sea and marine models) through a series of coordinated lectures and case studies on human health, physical environment, and oceanographic processes. Prerequisite: Permission of instructor.

PREREQUISITE: PERMISSION OF INSTRUCTOR

MBF545 Fisheries Sampling and Analysis
3 credits
Spring Semester
Students will learn about experimental sampling concepts and designs, instrumentation, survey implementation and statistical methods to assess fishery-independent size-structured population abundance of exploited and non-target species.
PREREQUISITE: MBF 508 OR PERMISSION FROM INSTRUCTOR-PREFERENCE WILL BE GIVEN TO MPS STUDENTS

MBF546 FISHERIES POPULATION BIOLOGY
3 credits
Spring Semester
Students will learn conceptual aspects and estimation methods for the main population processes such as growth, survival, reproduction and feeding. There will be an emphasis on data requirements and statistical validation of the data and model fitting, such that students will develop an ability to integrate and summarize complex biological knowledge under a set of well defined protocols.
PREREQUISITE: MBF 508 OR PERMISSION FROM INSTRUCTOR. PREFERENCE WILL BE GIVEN TO MPS STUDENTS

MBF547 Fisheries Ecosystems: Management and Conservation
3 credits
Spring Semester
Students will learn about the biological, social, economic and legal aspects of fisheries management. Case studies will be used to demonstrate why the success and failures of some fisheries management systems.

MBF550 Analytical Techniques in Marine Biology
2 credits
Offered By Announcement Only
Theory and applications of selected analytical techniques necessary to conduct quantitative research in marine biology (e.g., electrophoresis, metabolite assays, enzyme assays, radioisotope methodology). One hour lecture followed by three hour laboratory per week.

MBF555 Graduate Physiology
3 credits
Spring Semester
Broad overview of concepts important for physiology. Topics include discussions of genomes, molecular evolution and functional genetics (metabolism), cell biology and cell communication, and organismal-environmental interactions. Readings from the primary literature are included with an emphasis on seminal papers.
PREREQUISITE: NONE

MBF565 Fisheries Ecology and Oceanography
3 credits
Fall Semester
MBF570 Special Topics  
1-4 credits Offered By Announcement Only  
Lectures, research projects or directed readings in special topics related to Marine Biology and Fisheries.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MBF571 Special Topics  
1-4 credits Offered By Announcement Only  
Lectures, research projects or directed readings in special topics related to Marine Biology and Fisheries.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MBF572 Special Topics  
1-4 credits Offered By Announcement Only  
Lectures, research projects or directed readings in special topics related to Marine Biology and Fisheries.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MBF573 Special Topics  
1-4 credits Offered By Announcement Only  
Lectures, research projects or directed readings in special topics related to Marine Biology and Fisheries.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MBF574 Special Topics  
1-4 credits Offered By Announcement Only  
Lectures, research projects or directed readings in special topics related to Marine Biology and Fisheries.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MBF575 Current Applications of Ecological Theory  
3 credits Offered By Announcement Only  
Course examines current applications of ecological theory. Topics include issues of stress ecology, methodologies for evaluating stress responses, methodologies for ecological risk assessment, general systems theory, and human/environmental interactions. Lecture, 3 hours.  
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

MBF576 Diseases of Marine Organisms  
3 credits Offered By Announcement Only  
Infectious, genetic, and environmentally induced diseases of marine fishes and invertebrates as well as diagnostic methods, cellular, and molecular pathology. Lecture, 3 hours.  
PREREQUISITE: GRADUATE STANDING; OR BIL 150, 160, 255 AND PERMISSION OF THE INSTRUCTOR.

MBF578 Evolutionary Genetics  
3 credits Fall Semester  
A Graduate course that presents an overview from "New Evolutionary Synthesis" (1900) to Evolutionary Genomics. The critical points to emphasize is the importance of standing genetic variation, the role of neutral evolutionary process versus evolution by natural selection and how a evolution perspective provides meaning insights into the biology.
MBF586 Environmental Biology of Fishes
3 credits
Offered By Announcement Only
Ecology, dispersal, and modes of life of fishes. Adaptations by larvae and adults
to various habitats are covered as well as the effects of man on fish faunas and
the importance of fishes to various ecological systems. Lecture, 3 hours.

MBF590 Acoustic Measurement of Nekton, Plankton and Underwater Habitat.
3 credits
Fall Semester
MBF 590 is an introductory course on the theory, history and applications of acoustics
to measure nekton, plankton and underwater habitat. It was designed for those students
who wish to learn how to make quantitative measures of organisms and structure
underwater. It is a prerequisite for MBF 690, Advance Measurement of Nekton, Plankton
and Underwater Habitat, which focuses on data acquisition in the field and laboratory
signal processing. This course is essential for students who need to make precise
and accurate underwater measurements for their research.
PREREQUISITE: PERMISSION FROM THE INSTRUCTOR.

MBF602 Biological Oceanography Seminar
1 credit
Fall & Spring Semester
Participation is required of all students in Marine Biology and Fisheries department
every semester they are in residence whether or not they are registered for the
course. Students past their second semester must give one 20-minute presentation
per year, on their research or other acceptable topic. Dates are be assigned by
lottery. Course may be taken for credit only once.

MBF604 Biological Oceanography
3 credits
Fall Semester
A comprehensive course in Biological Oceanography, including energy flow, biogeochemical
cycles, planktonic and benthic ecosystem structure, evolutionary ecology, adaptations
of marine organisms, and paleoceanography. Course is required of all MBF students
and should be taken in sequence with Oceanography I (MPO 501), Oceanography II
(MAC 502), and Oceanography IV (MGG 504).
PREREQUISITE: NON-MARINE BIOLOGY MAJORS NEED PERMISSION OF INSTRUCTOR.

MBF607 Biochemical Toxicology
3 credits
Offered By Announcement Only
Biochemical mechanisms of absorption, distribution, metabolism, and excretion of
natural and synthetic environmental toxicants. Methods for evaluation of acute
and chronic toxicity, carcinogenesis, mutagenesis, and teratogenesis including
in vivo, isolated organ, tissue culture, and subcellular approaches to toxicity
testing are included.
PREREQUISITE: BMB 506 OR PERMISSION OF INSTRUCTOR.

MBF610 The Physical Environment of Marine Organisms
3 credits
Spring Semester
The fluid environment of the sea influences the growth, distribution, and survival
of marine organisms. The physical processes that affect organisms occur in space
and time, ranging from the molecular properties of water to basin-wide linkages
between oceanic regime and climate shifts are discussed. Course emphasis is placed
on how physical processes affect the life of plankton to nekton. Students are required
to present reviews based on the literature.
MBF613 Marine Population Dynamics
3 credits
Spring Semester
The concepts of stocks, sub-populations, and populations as biological systems in the marine environment. Quantitative studies of growth, mortality, recruitment, and abundance of marine populations are discussed. Data requirements, experimental design, sampling, and mathematical procedures for estimating population parameters are included. Lecture and laboratory.
PREREQUISITE: MBF 508, 510 OR PERMISSION OF INSTRUCTOR.

MBF614 Population Modeling and Management
3 credits
Fall Semester
Mathematical and computer-intensive models of exploited populations fish, shellfish, marine mammals, and sea turtles. Stock production (surplus production), structured analytical yield (yield-per-recruit and age-size structured assessments), stock and recruitment, simulation modeling, adaptive control theory, risk assessments, and decision theoretic analyses are discussed. Techniques of management, concepts of resource allocation, and fishery management institutions with case studies are also included. Lecture and computer-based laboratory.
PREREQUISITE: MBF 613 OR PERMISSION OF INSTRUCTOR.

MBF615 Advanced Biometrics in Marine Science
3 credits
Spring Semester
An introduction to advanced statistical analysis of multivariate empirical observations with primary emphasis on applications in the assessment and interpretation of the dynamics of marine populations and communities in marine biology, biomedical sciences, fisheries, and biological oceanography. Advanced methods in linear, multiple and nonlinear regression analysis, probability and estimation theory, multiple partial correlation, ANCOVA, GLIM, general additive models, nonlinear optimization, multivariate statistics (classification and ordination), and sampling techniques. Exploratory data analysis and modeling are emphasized using the software SAS, S-PLUS, and MATLAB.
PREREQUISITE: MBF 508 OR PERMISSION OF INSTRUCTOR.

MBF633 Physiological and Biochemical Adaptations of Marine Organisms
2 credits
Fall Semester
Biochemical processes unique to marine organisms. Topics include ion transport and regulation, biochemical adaptations to high pressures and low temperatures, bioluminescence, biochemical aspects of migration and behavior, marine toxins and prostaglandins, and symbiotic associations.
PREREQUISITE: BMB 506 OR BIL 255.

MBF640 Marine Phytoplankton and Primary Productivity
3 credits
Offered By Announcement Only
Ecology of marine photoplankton and overview of major taxa including cyanobacteria. Distribution and magnitude of primary production in the sea and relationship to marine food webs and biogeochemical cycling is included.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MBF671 Advanced Studies
1-4 credits
Offered By Announcement Only
Supervised study in areas of special interest to graduate students.
PREREQUISITE: PERMISSION OF DIVISION ACADEMIC COMMITTEE.
MBF672 Advanced Studies
1-4 credits   Offered By Announcement Only
Supervised study in areas of special interest to graduate students.
PREREQUISITE: PERMISSION OF DIVISION ACADEMIC COMMITTEE

MBF673 Advanced Studies
1-4 credits   Offered By Announcement Only
Supervised study in areas of special interest to graduate students.
PREREQUISITE: PERMISSION OF DIVISION ACADEMIC COMMITTEE

MBF674 Advanced Studies
1-4 credits   Offered By Announcement Only
Supervised study in areas of special interest to graduate students.
PREREQUISITE: PERMISSION OF DIVISION ACADEMIC COMMITTEE

MBF675 Advanced Studies
1-4 credits   Offered By Announcement Only
Supervised study in areas of special interest to graduate students.
PREREQUISITE: PERMISSION OF DIVISION ACADEMIC COMMITTEE

MBF687 Biology and Systematics of Fishes
3 credits                                              Offered By Announcement Only
Lectures and laboratories on comparative evolution, morphology, physiology, and
ecology of fishes. Laboratory emphasis is placed on family level taxonomy and
systematics of marine and estuarine fishes.
PREREQUISITE: GENERAL BIOLOGY; COMPARATIVE ANATOMY DESIRABLE; PERMISSION OF INSTRUCTOR

MBF690 Advance Measurement on Nekton, Plankton, and Underwater habitat.
3 credits                                                           Spring Semester
MBF 690 is the second course in a series on the acoustic measurement of nekton,
plankton and underwater habitat. It follows in the introductory course MBF 590.
In this course, we will focus more on the acquisition and processing of plankton,
nekton and marine habitat data using sonar hydrophones. We will also spend time
reviewing and discussing the classic papers that have been published on this topic.
This class was designed for those students who wish to learn how to make quantitative
measures of organisms and underwater habitat structure for their research.
PREREQUISITE: MBF 590

MBF700 Practical Training and Internship
1-6 credits   Offered By Announcement Only
Supervised internship or off-campus employment for students pursuing the M.A.,
M.S., or Ph.D. degree. Consists of work related to research in progress.

MBF705 Special Project
1-6 credits   Fall & Spring Semester & First & Second Summer Session
Supervised project for students pursuing the Master of Arts degree in Marine Studies.
Consists of a paper, researched, and written on a topic approved by the student's
advisory committee, and presented as a seminar to the student's division. Six credits
are required for graduation.
PREREQUISITE: COMPLETION OF 24 GRADUATE COURSE CREDITS.
MBF710 Master's Thesis  
1- 6 credits  Fall & Spring Semester & First & Second Summer Session  
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

MBF715 Master's Thesis-Post Candidacy  
1- 6 credits  Fall Semester  
Used to establish student has been admitted to candidacy for the MS Degree. The student working on his/her Master's Thesis enrolls for credit not to exceed 06 combined with 710. Credit is not awarded until the Thesis has been accepted.

MBF720 Research in Residence  
0 credit  Fall & Spring Semester & First & Second Summer Session  
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in MBF 710 (usually six credits). Credit not granted. May be regarded as full time residence.

MBF730 Doctoral Dissertation  
1-12 credits  Fall & Spring Semester & First & Second Summer Session  
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor but not for less than a total of 12. Not more than 12 hours of MBF 730 may be taken in a regular semester, nor more than six in a summer session. Where a student has passed his/her (a) qualifying examinations, and (b) is engaged in an assistantship, he/she may still take the maximum allowable credit stated above.

MBF750 Research in Residence  
0 credit  Fall & Spring Semester & First & Second Summer Session  
Used to establish research in residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

MARINE GEOLOGY & GEOPHYSICS  
MGG501 Oceanography I (Geological)  
2 credits  Fall Semester  
The first section of the core course curriculum designed as an integrated and multidisciplinary view of ocean processes, covering the major disciplines of marine science and their applications to the study of the marine environment. To be taken in sequence with Oceanography II - Physical (MPO 502), Oceanography III - Chemical (MAC 501), and Oceanography IV - Biological (MBF 502). This course is for non-MGG majors only.  
PREREQUISITE: UNDERGRADUATES REQUIRE PERMISSION OF INSTRUCTOR.

MGG511 Earth Surface Systems  
3 credits  Fall Semester  
An introduction to the elements of the earth surface environment and their interactions with an emphasis on the application to understanding the geologic record. Course includes discussions of the processes and agents that influence and shape the character of the earth's surface, the attributes of the resultant sedimentary features, and the use of these features to unravel geologic and geomorphic history. Focus is placed on systems dynamics and interactions among sedimentologic, geomorphic, biotic, and hydrologic processes.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.
MARINE AND ATMOSPHERIC SCIENCE

MARINE GEOLOGY & GEOPHYSICS

MGG512 Marine Micropaleontology
3 credits  
Fall Semester
An introduction to the field of marine micropaleontology with an emphasis on applications in biostratigraphy, biochronology, paleoecology, and paleoceanography. Topics include morphology, taxonomy, ecology, and geologic record of the major microfossil groups, methods of environmental inference, and stable isotope and trace element geochemical studies. Lab work includes a survey of the most important taxonomic groups. Lecture, 3 hours; laboratory, 2 hours. 
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG513 Introductory Geochemistry
3 credits  
Fall Semester
Fundamentals of atomic structure and quantum mechanics applied to Chemistry. Topics include origin and distribution of the elements, chemical bonding and substitution, basic thermodynamics of solids, liquids, and gases. Applications of these concepts to such geochemical processes as magmatic differentiation, rock-water interactions, low temperature aqueous geochemistry, and the geochemical cycling of the elements is also included.

MGG514 Geophysics
3 credits  
Fall Semester
Course topics include seismology, gravity, heat flow, thermal history, geomagnetism, plate tectonics, and their importance in understanding the Earth's crust, mantle, and core. 
PREREQUISITE: ONE YEAR OF CALCULUS AND ONE YEAR OF PHYSICS.

MGG515 Environmental Hydrology
3 credits  
Fall Semester
Course offers an introduction to the physical processes of hydrological science. The mechanisms of evaporation, condensation, precipitation, infiltration, groundwater flow, overland flow, and stream flow are described. Areas of interrelation with environmental science, marine science, and geophysical science is emphasized. Description of appropriate measurement techniques and data interpretation methods are important parts of the course. 
PREREQUISITE: PHYSICS.

MGG520 Igneous Petrology
3 credits  
Fall Semester
Origin and differentiation of magmas in oceanic and continental settings. Igneous systems traced from the mantle and magma chambers to the eruptive stage. What we can tell from textures and mineralogy of igneous rocks. Use of trace-element and isotopes to understand igneous processes and magma source compositions. Magma types and plate-tectonic cycle. Magmatism when the Earth was young. Extra-terrestrial igneous rocks.

MGG525 Applied Environmental Geophysics
3 credits  
Offered By Announcement Only
Application of subsurface geophysical tools to environmental problems. Course includes the theory and application of shallow refraction and reflection seismology, conducting field experiments and processing both marine and land seismic data, other marine survey techniques such as side-scan sonar surveying, potential field techniques (gravity, magnetics, EM), ground penetrating radar, and borehole geophysics. 
PREREQUISITE: PERMISSION OF INSTRUCTOR.
MGG533 Environmental Geology  
3 credits  
Offered By Announcement Only  

MGG541 Field Evaluation of Fossil Platforms, Margins, and Basins  
2 credits  
Offered By Announcement Only  
Field investigation of classic rock sequences formed within ancient platform, margin, and basin environments. The use of ancient exposures as a guide to the interpretation of modern marine environments.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG550 Mathematical Methods for Geoscientists  
3 credits  
Fall Semester  
Background mathematics needed to solve problems in the geosciences. Applications in tectonics, geodynamics, structural geology, seismology, and hydrology. Topics include linear inverse problems, least squares, linear algebra, matrix theory, vectors, dimensional analysis, probability and scientific inference, continuum mechanics, transform and numerical methods to solve differential, and partial differential equations.  
PREREQUISITE: ONE YEAR OF CALCULUS AND ONE YEAR OF PHYSICS.

MGG570 Continental Tectonics  
3 credits  
Spring Semester  
Reviews major research techniques used in the study of the structure and evolution of continental crust and topical discoveries, with an emphasis on the Neogene to Recent time. The course begins with brief introductions to the fields of structural geology, seismology, and geodesy as they relate to continental tectonics. New research in areas such as the rheology of the lithosphere, plate motion models, deformation of continental crust in plate boundary zones, oblique subduction, and earthquake hazard assessment are also discussed.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG579 Plate Tectonics  
3 credits  
Fall & Spring Semester  
The theory of plate tectonics, sea floor spreading, and continental drift. Mathematical description of plate motions, finite and instantaneous rotation poles, consequences of plate tectonics, mountain building, rifting, erosion, and recycling of continental materials are also discussed.  
PREREQUISITE: PERMISSION OF INSTRUCTOR
MGG580 Geological and Environmental Remote Sensing
3 credits
Spring Semester
This one semester course will cover major remote sensing techniques used in the geological and environmental sciences. The course will begin with an introduction to the basic physics of remote sensing, followed by a review of major remote sensing techniques used in aircraft and satellite platforms, including IR and near IR, optical and microwave systems. We will then discuss specific terrestrial and coastal applications using a case history approach, including geologic, soil and biomass mapping, environmental monitoring, and natural hazard assessment. The course is aimed at graduate students and senior undergraduates with some background in math and physics. Grades are based on problems sets (a minimum of three), a mid-term test, and a report or lab exercise involving image processing, due at the end of the semester.
PREREQUISITE: CALCULUS AND PHYSICS.

MGG581 Image Analysis and Interpretation
3 credits
Offered By Announcement Only
Course provides a hands-on approach to learning how to use aerial photography, satellite imagery, and other remotely sensed data to derive information about the physical environment. This course enables the student to process, interpret, and analyze remotely sensed data for use in environmental research. Image Analysis and Interpretation complements the course, MGG 580.

MGG583 Scanning Electron Microscopy
2 credits
Spring Semester
Theory and practical application of the SEM and the electron probe to research problems. Lectures and laboratory with emphasis on independent operation of the SEM, special preparation techniques, and interpretation of results are included. Course is designed to provide students with a broad and thorough background in scanning electron microscopy.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG584 Special Topics
1-4 credits
Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to Marine Geology and Geophysics.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG585 Special Topics
1-4 credits
Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to Marine Geology and Geophysics.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG586 Special Topics
1-4 credits
Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to Marine Geology and Geophysics.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG587 Special Topics
1-4 credits
Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to Marine Geology and Geophysics.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
MGG588 Special Topics

1-4 credits  Offered By Announcement Only

Lectures, research projects or directed readings in special topics related to Marine Geology and Geophysics.

PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG601 Seminar in Marine Geology and Geophysics

1 credit  Fall & Spring Semester

Oral presentation and discussion of research and special topics by students, faculty, and visiting scientists. Students receiving credit are required to present a seminar.

MGG620 Satellite Radar Interferometry in the Earth Sciences

3 credits  Fall Semester

Spaceborne interferometric Synthetic Aperture Radar is an important technique for various disciplines in the Earth Sciences, such as geodesy, glaciology and hydrology. This course reviews the principles of radar, synthetic aperture radar of interferometric and differential radar interferometric techniques.

PREREQUISITE: PERMISSION OF INSTRUCTOR

MGG622 Geophysical Onverse Theory

3 credits  Spring Semester

This course covers the principles of geophysical inverse theory as applies to problems in the Earth Sciences. Inverse theory is a set of mathematical techniques used to obtain inferences about the Earth from physical measurements. The focus of this class will be on formulating and solving inverse problems, and understanding the non-uniqueness and resolution associated with inversions. The emphasis will be on geodetic data (obtained from GPS and InSAR measurements).

PREREQUISITE: 514 AND/OR PERMISSION OF INSTRUCTOR

MGG650 Stable Isotopes in Biogeochemical Processes

3 credits  Offered By Announcement Only

Theory of stable isotope fractionation, methods of measurement, and application of results to geological, biological, and oceanographic processes. Hands-on experience in the stable isotope laboratory is provided utilizing a range of techniques. A project chosen either by the student or instructor is required. All students who wish to use the stable isotope facility should take this course. Lecture, 2 hours; laboratory, 3 hours. Prerequisite: Permission of instructor.

PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG660 GIS Programming

1 credit  Spring Semester

Course provides a hands-on approach to learning GIS programming using Avenue for ArcView GIS (ESRI). Avenue is an object-oriented programming language used to create customized graphical user interfaces, automated tasks, and spatially enabled applications. Students learn how to employ object-oriented programming techniques and modeling methods to develop spatially explicit applications. Prerequisite: MAF 561 or permission from the instructor.

PREREQUISITE: MAF 561 OR PERMISSION FROM THE INSTRUCTOR.

MGG661 Sedimentary Petrology

3 credits  Fall Semester

Composition, texture, fabric, and structures of sediments and sedimentary rocks. The occurrence and properties of the major classes of detrital and chemical sediments from a petrologic and historical perspective is discussed.

PREREQUISITE: MGG 520.
MGG662 Comparative Sedimentology
3 credits
Spring Semester
The use of modern sediments to decipher processes of origin, accumulation, and early diagenesis as the basis for interpreting environments and architecture of ancient deposits in outcrop and in the subsurface. Evaluation of the sedimentary record of climate and sea level changes is included as well as the application of facies models for interpretation of seismic and log data.
PREREQUISITE: MGG 511.

MGG663 Deep Sea Sedimentation
3 credits
Offered By Announcement Only
Course topics include classification and major constituents of deep-sea sediments, origin of red clay, production, dissolution, deposition of pelagic carbonate and silica, turbidite sedimentation, hemipelagic deposits, interpretation of the record (plate tectonics and plate stratigraphy, ancient deep-sea sediments and ancient oceans).
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

MGG668 Isotopic Processes in Earth Sciences
3 credits
Offered By Announcement Only
The use of isotopic methods in geology, geochemistry, and geophysics, including oceanography and meteorology. General laws governing isotopic effects in chemical and physical processes are discussed. Specific problems in dating, tracing, and paleotemperatures are also included.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG669 Advanced Geophysics
3 credits
Offered By Announcement Only
The application of geophysical methods, including seismic refraction, seismic reflection, heat flow, gravity, magnetic field and paleomagnetism, to the study of the structure of oceanic crust.
PREREQUISITE: MGG 514.

MGG670 Seismic Exploration
3 credits
Spring Semester
Elementary theory of seismic waves. Topics include techniques of seismic data acquisition and processing, methods of geophysical and geological interpretation of seismic data, application to hydrocarbon exploration, principles of seismic stratigraphy, and other geophysical methods related to hydrocarbon exploration.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG671 Diagenesis of Carbonate Sediments
3 credits
Spring Semester
Application of geochemical, mineralogical, and petrological principles to the behavior of carbonate minerals in sediments. Physical and chemical conditions responsible for cementation, dolomitization, and aragonite-calcite phase transitions are emphasized. Types of depositional and diagenetic information which may be preserved in carbonate sediments. Laboratory studies of sediments are included.
PREREQUISITE: MGG 513; PERMISSION OF INSTRUCTOR.
MARINE AND ATMOSPHERIC SCIENCE
MARINE GEOLOGY & GEOPHYSICS

MGG672 Basin Analysis and Seismic Interpretation  
3 credits Spring Semester  
The processes of basin formation and filling. The principles of seismic facies analysis, seismic sequence stratigraphy, and their applications in basin analysis, groundwater management, and exploration for hydrocarbons are discussed.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG676 Paleoclimatology  
3 credits Fall Semester  
Climatic variables and their effects on geological and biological processes. The development of the paleoclimatic record, modeling of present climate, and the extrapolation to past and future climates are discussed.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG677 Submarine Volcanism and Its Products  
3 credits Fall Semester  
Course topics include classification of volcanoes, their activity and products, submarine versus subaerial volcanoes, historical submarine eruptions, and hydrothermal activities, origin and differentiation of magmas, petrology of submarine, volcanic rocks, geographic distribution of volcanoes, and their tectonic setting are also discussed..  
PREREQUISITE: MGG 520 OR PERMISSION OF INSTRUCTOR.

MGG678 Modeling of Marine Biogeochemical Processes  
3 credits Offered By Announcement Only  
Diagenesis models, including bioturbation and dissolution in the CaCO3 and SiO2 systems. Energy balance climate models and oscillatory states of a simple air-water-ice system are discussed as well as modeling of sedimentation and transport processes.

MGG681 Advanced Studies  
1- 4 credits Offered By Announcement Only  
Special study in areas of special interest to graduate students.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG682 Advanced Studies  
1- 4 credits Offered By Announcement Only  
Special study in areas of special interest to graduate students.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG683 Advanced Studies  
1- 4 credits Offered By Announcement Only  
Special study in areas of special interest to graduate students.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG684 Advanced Studies  
1- 4 credits Offered By Announcement Only  
Special study in areas of special interest to graduate students.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MGG685 Advanced Studies  
1- 4 credits Offered By Announcement Only  
Special study in areas of special interest to graduate students.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.
MGG700 Practical Training and Internship
1-6 credits Offered By Announcement Only
Supervised internship or off-campus employment for students pursuing the M.A., M.S., or Ph.D. degree. Consists of work related to research in progress.

MGG705 Special Report
1-6 credits Fall & Spring Semester & First & Second Summer Session
Supervised project for students pursuing the Master of Arts degree in Marine Studies. Course consists of a research paper, researched, and written on a topic approved by the student's advisory committee, and presented as a seminar to the student's division. Six credits are required for graduation.
PREREQUISITE: COMPLETION OF 24 GRADUATE COURSE CREDITS.

MGG710 Master's Thesis
1-6 credits Fall & Spring Semester & First & Second Summer Session
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

MGG720 Research in Residence
0 credit Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in MGG 710 (usually six credits). Credit not granted. May be regarded as full time residence.

MGG730 Doctoral Dissertation
1-12 credits Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor but not for less than a total of 12. Not more than 12 hours of MGG 730 may be taken in a regular semester, nor more than six in a summer session. Where a student has passed his/her (a) qualifying examinations, and (b) is engaged in an assistantship, he/she may still take the maximum allowable credit stated above.

MGG750 Research in Residence
0 credit Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

MARINE & ATMOSPHERIC CHEMISTRY
MAC503 Principles of Marine and Atmospheric Chemistry
3 credits Fall Semester
Introduction to the chemical aspects of the sea and atmosphere chemical composition, physico-chemical properties and relationships, methodology of study, fundamental aspects of marine and atmospheric chemistry.
PREREQUISITE: CHM 111 OR PERMISSION OF INSTRUCTOR.
MAC510 Biogeochemical Exploration of the Major Ocean Basins
3 credits
Fall Semester
This course will have students explore the basic hydrography and biochemistry of the major ocean basins through use of several publicly available global ocean data sets. Each ocean basin will be assessed for biogeochemical features that are unique to that system. By the end of the course, students will have the skills necessary to investigate and interpret marine biogeochemical processes throughout the global ocean.
PREREQUISITE: PERMISSION OF INSTRUCTOR

MAC560 Tropospheric Chemistry I
3 credits
Spring Semester
Process-Oriented lower atmospheric chemistry. Topics include photochemical oxidant formation, nighttime chemistry, air-sea exchange, cloud droplet and aerosol reactions, physical properties of aerosols, and transport properties of the troposphere.
PREREQUISITE: MPO 552 OR AN UNDERGRADUATE METEOROLOGY COURSE, OR PERMISSION OF INSTRUCTOR.

MAC581 Special Topics in Marine and Atmospheric Chemistry
1-4 credits
Offered By Announcement Only
Lectures, research projects or direct readings in special topics of marine and atmospheric chemistry.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAC584 Special Topics
1-4 credits
Offered By Announcement Only
Lectures, research projects or directed readings in special topics of Marine and Atmospheric Chemistry.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAC605 Chemical Oceanography
3 credits
Spring Semester
Course consists of lecture and discussions with renowned experts in the major disciplinary foci and topical issues dominating the field of Chemical Oceanography. Topics include the chemistry and biogeochemical processes of the carbon cycle, ocean tracers, photochemistry, and specific marine environments (geothermal vents, anoxic waters, sediments, air/sea interface).
PREREQUISITE: MAC 503 OR PERMISSION OF INSTRUCTOR.

MAC615 Tracers of Oceanographic Processes
3 credits
Spring Semester
Course describes the various tracer techniques used by oceanographers to understand water transport and mixing, sedimentation, gas exchange, nutrient recycling, and transport. Tracers used are both natural occurring and anthropogenic. This course is of interest to students from various disciplines.

MAC620 Marine Physical Chemistry
3 credits
Spring Semester
Physical-chemical principles applied to the marine environment, based on thermodynamics and the study of rate processes.
PREREQUISITE: TWO SEMESTERS OF PHYSICAL CHEMISTRY, CALCULUS THROUGH DIFFERENTIAL EQUATIONS.
MARINE & ATMOSPHERIC CHEMISTRY

MAC625 Marine Biochemical Cycles  
3 credits  
Spring Semester  
Course discusses the roles of bacteria in the transformation of compounds in the marine environment, their functions in the carbon, nitrogen, sulfur, and phosphorus cycles, and transformation of metals. Bacterial activities in the deep-sea environment and their involvement in corrosion and fouling is also discussed.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAC650 Reaction Kinetics and Molecular Dynamics  
3 credits  
Spring Semester  
Theories and experimental techniques for studying kinetics in the gas-phase, association, unimolecular and bimolecular reactions, chain reactions, flames, statistical theories, potential energy surfaces, collision dynamics, kinetics in solution and the solid-state, experimental methods, diffusion-controlled processes, transition state theory, thermal decomposition, and nucleation are discussed.  
PREREQUISITE: THERMODYNAMICS, ELEMENTARY STATISTICAL MECHANICS.

MAC661 Tropospheric Chemistry II  
3 credits  
Fall Semester  
Chemical and physical properties of tropospheric aerosols. Topics include properties of aerosols, dynamics of single aerosol particles, thermodynamics of aerosols, nucleation theory, aerosol growth, heterogeneous processes, dynamics of aerosol populations, and radiative properties of atmospheric aerosols.  
PREREQUISITE: TROPOSPHERIC CHEMISTRY I.

MAC662 Environmental Photochemistry  
3 credits  
Offered By Announcement Only  
Introduction to the principles of photochemistry and their application to understanding sunlight initiated processes in the region of the ocean-atmosphere interface. Organic and inorganic photochemical reactions and subsequent thermal reactions in solution, gas, and solid media are discussed.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAC665 Chemistry of Middle and Upper Atmosphere  
3 credits  
Fall Semester  
Course addresses the structure of the stratosphere, mesosphere, and ionosphere, ion chemistry, aurorae, meteoritic chemistry, the ozone layer and anthropogenic influences, techniques for making atmospheric observations, and development of chemical models with simple transport.  
PREREQUISITE: ELEMENTARY GAS-PHASE KINETICS, THERMODYNAMICS

MAC670 Seminar in Marine and Atmospheric Chemistry  
0-1 credits  
Fall & Spring Semester  
Oral presentation of research and special topics by students, faculty, and visiting scientists.

MAC671 Diagenesis of Carbonate Sediments  
3 credits  
Offered By Announcement Only  
Application of geochemical and mineralogic principles to the behavior of carbonate minerals in sediments. Physical and chemical conditions responsible for cementation, dolomitization, and aragonite-calcite phase transitions are emphasized. Types of depositional and diagenetic information which may be preserved in carbonate sediments are also examined. Laboratory studies of sediments is included. Identical to MGG 671.  
PREREQUISITE: MGG 511 AND 513 (OR 514).
MARINE AND ATMOSPHERIC SCIENCE

MAC681 Advanced Studies
1-4 credits  Offered By Announcement Only
Supervised study in areas of special interest to graduate students.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MAC700 Practical Training and Internship
1-6 credits  Offered By Announcement Only
Supervised internships or off-campus employment for students pursuing the M.A., M.S., or Ph.D. degree. Consists of work related to research in progress.

MAC705 Special Report
1-6 credits  Fall & Spring Semester & First & Second Summer Session
Supervised project for students pursuing the Master of Arts degree in Marine Studies. Consists of a paper, researched, and written on a topic approved by the student's advisory committee, and presented as a seminar to the student's division. Six credits are required for graduation.
PREREQUISITE: COMPLETION OF 24 GRADUATE COURSE CREDITS.

MAC710 Master's Thesis
1-6 credits  Fall & Spring Semester & First & Second Summer Session
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

MAC720 Research in Residence
0 credit  Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in MAC 710 (usually six credits). Credit not granted. May be regarded as full time residence.

MAC730 Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor but not for less than a total of 12. Not more than 12 hours of MAC 730 may be taken in a regular semester, nor more than six in a summer session. Where a student has passed his/her (a) qualifying examinations, and (b) is engaged in an assistantship, he/she may still take the maximum allowable credit stated above.

MAC750 Research in Residence
0 credit  Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

MARINE & PHYSICAL OCEANOGRAPHY

MPO502 Oceanography II (Physical)
2 credits  Fall Semester
The second section of the course core curriculum designed as an integrated and multidisciplinary view of ocean processes, covering the major disciplines of marine science and their applications to the study of the marine environment. To be taken in sequence with Oceanography I - Geological (MGG 501), Oceanography III - Chemical (MAC 501), and Oceanography IV - Biological (MBF 502). This course is for non-MPO majors only.
PREREQUISITE: UNDERGRADUATES REQUIRE PERMISSION OF INSTRUCTOR.
MPO503 Physical Oceanography
3 credits  
Fall Semester
Introduction to properties of seawater, instruments and methods, heat budget, general ocean circulation, formation of water masses, dynamics of circulation, regional oceanography, waves, tides, and sea level. A mathematical and problem solving course for majors in MPO.
PREREQUISITE: PHY 202 OR 206, MTH 310 OR 311, OR PERMISSION OF INSTRUCTOR.

MPO511 Geophysical Fluid Dynamics I
3 credits  
Fall Semester
The basic equations of state, continuity, and motion. Topics include wave motions, group velocity, theory of stratified fluids and internal waves turbulence.
PREREQUISITE: MPO 551, OR PERMISSION OF INSTRUCTOR.

MPO518 Remote Sensing of the Atmosphere
3 credits  
Offered By Announcement Only
Methods and techniques for remote sensing of the earth's atmosphere. Absorption and scattering of radiation by atmospheric constituents, molecular line or band absorption, and radiative transfer equation are discussed. Application to microwave radar, laser, and optical radar, ground and satellite and optical radar and radiometry, scattering of acoustic waves by turbulence, and to acoustic echo sounding methods are also included.
PREREQUISITE: EEN 533 AND/OR PERMISSION OF INSTRUCTOR.

MPO531 Physical Meteorology
3 credits  
Offered By Announcement Only
Electromagnetic and acoustic wave propagation, absorption, and emission. Application to remote sensing, basic physics of dry aerosols, clouds and precipitation, fundamentals of atmospheric electricity, charge separation processes, and electrical field effects are also discussed. Other topics include air pollution physics, dispersal, and removal of particulate and gaseous materials from natural and anthropogenic sources.
PREREQUISITE: BASIC CALCULUS AND ORDINARY DIFFERENTIAL EQUATIONS.

MPO532 Broadcast Meteorology
3 credits  
Spring Semester
Students will learn the proper techniques involved in preparing and presenting a complete and professional weathercast with a heavy emphasis on communication skills, computer graphics, and on-camera delivery.
PREREQUISITE: MPO 551 OR CONSENT OF INSTRUCTOR

MPO542 Physics of Remote Sensing I - Passive Systems
3 credits  
Fall Semester
Course discusses basic physical principles of remote sensing. Topics include an introduction, sampling issues, fundamental laws of electromagnetic waves, passive sensing, active sensing, and a brief survey of satellite sensors.
PREREQUISITE: PERMISSION OF INSTRUCTOR

MPO551 Introduction to Atmospheric Science
3 credits  
Fall Semester
Thermodynamics of dry and moist processes; elementary dynamical meteorology; description of weather systems and phenomena on all scales; structure and mechanics of the general circulation. Corequisite: MPO 552.
PREREQUISITE: PHY 206, MTH 310 OR 311, OR PERMISSION OF INSTRUCTOR.
MPO552 Synoptic Meteorological Laboratory
1 credit  
Analysis of the structure of atmospheric systems.  
PREREQUISITE: PHY 206, MTH 310 OR 311, OR PERMISSION OF INSTRUCTOR.

MPO561 Tropical Atmosphere and Ocean
3 credits  
Spring Semester
Observed structure of large-scale tropical circulations, including the Trades, the intertropical Convergence Zone, the Walker circulation, and equatorial wave disturbances. An overview of tropical climate, including El Nino/Southern Oscillation, and tropical monsoons is included as well as the formation, structure, and dynamics of tropical cyclone interactions between tropical convection and large-scale circulations, equatorial waves, and flow instabilities.  
PREREQUISITE: MPO 511, 551, OR PERMISSION OF INSTRUCTOR.

MPO562 Synoptic Scale Meteorology
3 credits  
Offered By Announcement Only
Course topics include the structure and behavior of cyclones, anticyclones, and other temperate latitude synoptic scale disturbances. Objective analysis of synoptic observations, perturbation, stability analysis of large scale synoptic motions, and barotropic and baroclinic waves are also analyzed.  
PREREQUISITE: MSC 405 OR MPO 551 AND PERMISSION OF INSTRUCTOR.

MPO563 Mesoscale Meteorology and Severe Storms
3 credits  
Offered By Announcement Only
Course topics include the structure and dynamics of clouds, thunderstorms, and mesoscale convective systems, radar and satellite observations of clouds and precipitation, severe storm forecasting, mesoscale disturbances, frontal and orographic clouds, and precipitation.  
PREREQUISITE: MSC 405 OR MPO 551 AND PERMISSION OF INSTRUCTOR.

MPO581 Special Topics
1-4 credits  
Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to Meteorology and Physical Oceanography.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MPO582 Special Topics
1-4 credits  
Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to Meteorology and Physical Oceanography.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MPO583 Special Topics
1-4 credits  
Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to Meteorology and Physical Oceanography.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MPO584 Special Topics
1-4 credits  
Offered By Announcement Only
Lectures, research projects or directed readings in special topics related to Meteorology and Physical Oceanography.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.
**MPO585 Special Topics**  
1-4 credits, Offered By Announcement Only  
Lectures, research projects or directed readings in special topics related to Meteorology and Physical Oceanography.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

**MPO601 Seminars in Meteorology and Physical Oceanography**  
1 credit, Fall & Spring Semester

**MPO611 Geophysical Fluid Dynamics II**  
3 credits, Spring Semester  
The focus of this course is on the effects of stratification, on time variable phenomena, and on the interaction between large-scale circulation and mesoscale eddies. Course topics include quasi-geostrophic scale analysis, Rossby waves, barotropic and baroclinic instability, wave-mean flow interaction and non-geostrophic waves.  
PREREQUISITE: MPO 511.

**MPO612 Large Scale Ocean Circulation: Models and Observations**  
3 credits, Spring Semester  
Course topics include theoretical models of the oceanic current systems, wind-driven and thermohaline circulation, effects of bottom topography, and lateral bounding.  
PREREQUISITE: MPO 611 OR PERMISSION OF INSTRUCTOR.

**MPO615 Numerical Weather Prediction**  
3 credits, Offered By Announcement Only  
Review of fundamental equations and principal wave solutions. Course topics include finite differences, the filtering problem, the equivalent-baratropic model, multi-level primitive equation models, model initialization and verification, and models currently used by the weather service.  
PREREQUISITE: MPO 551.

**MPO621 Waves and Tides I**  
3 credits, Fall Semester  
Systematic development of equations governing long waves in the ocean. Course topics include tidal dynamics and tide-generating forces, inertio-gravity, planetary, and longs, presurface waves, waves trapped and scattered by topography, and equatorial waves.  
PREREQUISITE: MPO 511 OR PERMISSION OF INSTRUCTOR.

**MPO623 Statistical Analysis of Geophysical Data**  
3 credits, Spring Semester  
Review of statistical methods. Course topics include statistical description of wave fields, especially inertio-gravity waves, processing methods for general and hydrodynamically conditioned signals, time series analysis, objective analysis, and empirical spectral analysis.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

**MPO624 Statistical Modeling of Geophysical Fields**  
3 credits, Spring Semester  
An advanced course in statistical modeling, analysis, and assimilation of geophysical data. Emphasis is placed on practical applications, computer software, and new nonstandard techniques.  
PREREQUISITE: ONE LINEAR ALGEBRA CLASS AND MPO 623 OR PERMISSION OF INSTRUCTOR.
MPO631 Air-Sea Interaction  
3 credits  
Spring Semester  
PREREQUISITE: MPO 611 OR PERMISSION OF INSTRUCTOR.

MPO632 Climate Dynamics  
3 credits  
Offered By Announcement Only  
Basic understanding of the Earth's Climate System and its variability on time scales ranging from weeks to millennia. Topics include internal atmospheric variability, coupled ocean-atmosphere interactions, and the theory, observations and modeling of climate change.  
PREREQUISITE: PREREQUISITE OR COREQUISITE: MPO 551.

MPO633 The Marine Atmospheric Boundary Layer  
3 credits  
Spring Semester  
The marine atmospheric boundary layer plays a key role in the two-way interaction between the atmosphere and the ocean. This course will focus on describing and explaining marine atmospheric boundary layer structure and its evolution. This will include an emphasis on the cloud-topped boundary layer (marine stratocumulus) and the trade-wind boundary layer. Thus, in addition to turbulence, the physical processes considered in this treatment of the marine boundary layer will include shallow moist convection and radiation. The course will start with a basic description of the atmospheric boundary layer that will include a review of the relevant dynamics and thermodynamics. More advance topics will be covered in the second half of the course. Although the course will be a series of formal lectures, students will independently research selected topics, prepare a short review paper, and give an oral summary class.  
PREREQUISITE: STUDENTS ENROLLING IN THIS CLASS SHOULD HAVE A BASIC KNOWLEDGE OF ATMOSPHERIC THERMODYNAMICS AND DYNAMICS (MPO 511 OR 551 OR EQUIVALENT).

MPO650 Coastal Ocean Circulation  
3 credits  
Spring Semester  
Circulation and stratification in the coastal ocean, including the dynamics of wind-driven, tidally-driven, and buoyancy-driven mean and transit flows over variable topography with density stratification are discussed. Design of numerical models and observing systems for coastal ocean circulation are also in included. (AMP 650).  
PREREQUISITE: AMP 535, 575 OR 576 AND PERMISSION OF INSTRUCTOR.

MPO651 Dynamic and Modeling of Weather and Climate Systems  
1 credit  
Fall & Spring Semester  
This course will cover a number of advanced topics not currently covered in other courses, such as mesoscale meteorology, mesoscale modeling, cloud physics, and storm dynamics.  
PREREQUISITE: MPO 551.

MPO662 Computer Models in Fluid Dynamics  
3 credits  
Spring Semester  
Course topics include numerical techniques of dealing with dynamic problems in meteorology and oceanography. Dynamic prediction models, initial data conditioning, computational stability, and error estimates are also included.  
PREREQUISITE: MPO 611 AND KNOWLEDGE OF COMPUTER PROGRAMMING.
MPO663 Convective and Mesoscale Meteorology
3 credits
Spring Semester
This course begins by establishing the dynamics, thermodynamics, and cloud microphysics fundamentals needed to understand convective clouds and storms. We also review the types of observations, both in situ and remote sensing, available for studying these storms. Observations of both tropical convection and more-vigorous midlatitude severe storms are presented and compared to numerical modeling results, with an emphasis on scientific understanding.
PREREQUISITE: MPO 551 OR EQUIVALENT.

MPO664 Atmospheric and Oceanic Turbulence
3 credits
Spring Semester
Structure and dynamics of planetary boundary layers, turbulent transport processes, Fickian and statistical theories of turbulence, influence of stratification, and rotation on turbulent motion are discussed.
PREREQUISITE: MPO 611 OR PERMISSION OF INSTRUCTOR.

MPO665 General Circulation of the Atmosphere
3 credits
Spring Semester
Course topics include structure and behavior of planetary scale motions, energy, momentum, and moisture budgets of the general circulation, and models of the general circulation and climatic change.
PREREQUISITE: MPO 611 OR PERMISSION OF INSTRUCTOR.

MPO668 ENSO Dynamics, Prediction and Predictability
3 credits
Fall Semester
This course will provide students with a comprehensive observational and mechanistic understanding of the El Nino and the Southern Oscillation (ENSO) phenomena and how ENSO impacts the natural variability of the global climate system. Topics will include: Observations and theories of the seasonal and interannual changes in the ocean circulation and temperature, and interactions with the atmosphere; equations of motion and theories of tropical ocean and atmosphere circulation; tropical wave dynamics; large scale air-sea coupling; mechanisms for ENSO: delayed oscillator theory, recharge oscillator theory, slow SST modes; ENSO prediction and predictability; ENSO-monsoon-Indian Ocean intersections; Global climate response to ENSO; decadal ENSO variability; ENSO in a changing climate. This course has a phenomenological focus, which complements current MPO course offerings. In particular, students who have taken dynamic and physical meteorology, ocean general circulation or geophysical fluid dynamics will be exposed to how general theory (e.g., wave dynamics) relates to particular phenomena and current research foci. In addition, student will have the opportunity to design and implement numerical hypothesis testing experiments.
PREREQUISITE: MPO 511 OR EQUIVALENT

MPO671 Advanced Studies in Meteorology and Physical Oceanography
1-4 credits Offered By Announcement Only
Supervised study in areas of special interest to graduate students.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MPO672 Advanced Studies
1-4 credits Offered By Announcement Only
Supervised study of special interest to graduate students.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
MARINE AND ATMOSPHERIC SCIENCE
MARINE & PHYSICAL OCEANOGRAPHY

MPO673 Advanced Studies in Meteorology and Physical Oceanography
1-4 credits   Offered By Announcement Only
Supervised study in areas of special interest to graduate students.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MPO674 Advanced Studies
1-4 credits   Offered By Announcement Only
Supervised study of special interest to graduate students.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MPO675 Advanced Studies
1-4 credits   Offered By Announcement Only
Supervised study of special interest to graduate students.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MPO700 Practical Training and Internship
1-6 credits   Offered By Announcement Only
Supervised internship or off-campus employment for students pursuing the M.A.,
M.S., or Ph.D. degree. Consists of work related to research in progress.

MPO705 Special Project
1-6 credits  Fall & Spring Semester & First & Second Summer Session
Supervised project for students pursuing the Master of Arts degree. Consists of
a paper, researched and written on a topic approved by the student's advisory
committee, and presented as a seminar to the student's division. Six credits are
required for graduation.
PREREQUISITE: COMPLETION OF 24 GRADUATE COURSE CREDITS.

MPO706 Special Project-Post Candidacy
1-6 credits  Fall & Spring Semester & First & Second Summer Session
Used to establish student has been admitted to candidacy for the MA degree. The
student working on his/her research paper enrolls for credit not to exceed 6 combined
with 705. No credit is awarded until final paper has been accepted.

MPO710 Master's Thesis
1-6 credits  Fall & Spring Semester & First & Second Summer Session
The student working on his/her master's thesis enrolls for credit, in most departments
not to exceed six, as determined by his/her advisor. Credit is not awarded until
the thesis has been accepted.

MPO715 Master's Thesis-Post Candidacy
1-6 credits  Fall & Spring Semester & First & Second Summer Session
Used to establish student has been admitted to candidacy for the MS degree. The
student working on his/her Master's Thesis enrolls for credit not to exceed 6
combined with 710. Credit is not awarded until the Thesis has been accepted.

MPO720 Research in Residence
0 credit                     Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master's degree
after the student has enrolled for the permissible cumulative total in MPO 710
(usually six credits). Credit not granted. May be regarded as full time residence.
MPO730 Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. The student will enroll for credit as
determined by his/her advisor but not for less than a total of 12. Not more than
12 hours of MPO 730 may be taken in a regular semester, nor more than six in a
summer session. Where a student has passed his/her (a) qualifying examinations,
and (b) is engaged in an assistantship, he/she may still take the maximum allowable
credit stated above.

MPO740 Doctoral Dissertation-Post Candidacy
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Used to establish student has been admitted to candidacy for the Ph.D degree. The
student working on his/her Doctoral Dissertation enrolls for credit for a minimum
of 12 combined with 730. Credit is not awarded until Dissertation has been accepted.

MPO750 Research in Residence
0 credit                     Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D., after the student has been
enrolled for the permissible cumulative total in appropriate doctoral research.
Credit not granted. May be regarded as full-time residence as determined by the
Dean of the Graduate School.

RSMAS-GENERAL
RSM500 Research Diving Techniques
3 credits                                              Offered By Announcement Only
This course is designed to introduce students to the practices and policies of
scientific diving. The object is to prepare students to use SCUBA as a research
tool for the marine sciences. The course content will qualify students as RESEARCH
DIVERS under the UM/RSMAS Scientific Diving Program and will meet the standards
set by the American Academy of Underwater Sciences (AAUS).

RSM510 Environmental Ethics
3 credits                                                             Fall Semester
This course will introduce students to a variety of key issues and concepts in
environmental ethics. The course will be a joint scientific and philosophic collaboration,
exploring the ethical dimensions of controversial and emerging issues in biotechnology
and the environment. After students are exposed to the scientific background of
various actual case studies focusing on current environmental and social impact,
the ethical and philosophical issues raised by the discussions will be explored
using the tools and methods of analytic philosophy. The course will develop the
student's ability to construct and evaluate philosophical arguments in the field
of environmental ethics, and to reason philosophically on numerous questions in
contemporary applied ethics.
PREREQUISITE: ALTHOUGH THERE ARE NO PHILOSOPHY PREREQUISITES FOR THIS COURSE, PERMISSION
OF INSTRUCTOR IS REQUIRED.

RSM512 Statistics for Environmental Management
3 credits                                                             Fall Semester
This course covers the statistical theory, tools, and methods required for management
analysis and improvement, emphasizing marine science applications.

RSM520 Climate and Society
3 credits                                                             Spring Semester
This course is designed to provide students from different disciplinary backgrounds
with an overview of physical processes, general concepts and policy debates surrounding
climatic issues.
RSM545 Scientific Communication
3 credits                      Spring Semester
PREREQUISITE: MPS STATUS OR PERMISSION FROM INSTRUCTOR/PREFERENCE WILL BE GIVEN TO MPS STUDENTS

RSM560 Investigating Nature through Science Teacher Active Research (INSTAR)
2 credits                      First & Second Summer Session
This is a graduate level marine science course that provides a hands-on approach to education focused on geological and meteorological research in South Florida environment. The course provides training in marine science content, field techniques, state-of-the-art field, computer technology, and science educational reform measures. Participants work collaboratively with marine and atmospheric scientists to bring cutting edge marine science content and research to the classroom focusing on the following coastal themes: geology, hydrology and meteorology. The course will be applicable to all graduate and qualified undergraduate marine science students, per-service teachers in colleges of education, and in-service teachers in school systems throughout the country.

RSM561 INSTAR for Physical Sciences Follow-up
1 credit                      First & Second Summer Session
This is a follow-up course for participants in MGG 560 and is designed to test the application of the methods learned in MGG 560 to the teaching of high school students. Participants are expected to show evidence of teaching material learned in MGG 560.
PREREQUISITE: RSM 560.

RSM562 Investigating Nature through Science Teacher Active Research in Biological Science
2 credits                      First & Second Summer Session
This is a graduate level marine science course that provides a hands-on approach to education focused on marine science research and technology in South Florida coastal environments. The course provides training in marine science content, field techniques, state-of-the-art field and computer technology, and science educational reform measures. Participants work collaboratively with marine scientists to bring cutting edge marine science content and research to the classroom focusing on the following coastal themes: coral reefs and marine fisheries. The course will be applicable to all graduate and qualified undergraduate marine science students, per-service teachers in colleges of education, and in-service teachers in school systems throughout the country.

RSM563 INSTAR Biological Sciences Follow-up
1 credit                      First & Second Summer Session
This is a follow-up course for participants in RSM 562 and is designed to test the application of the methods learned in RSM 562 to the teaching of high school students. Participants are expected to show evidence of teaching material learned in RSM 562.
PREREQUISITE: RSM 562.

RSM565 Fish Ecology and Oceanography
3 credits                      Fall Semester
This course is intended to introduce students to key biological, ecological, oceanographic, and climatic processes of direct relevance to fishery species, with a view toward development of an ecosystem perspective.
RSM570 Carbon and Climate
3 credits Offered By Announcement Only
This course is designed to provide students from different disciplinary backgrounds with an overview of the underlying processes, concepts, and policy debates surrounding the issue of carbon emissions and climate change. Individual faculty from RSMAS and elsewhere will lecture on cutting-edge research areas. Topics covered include: climate modeling; and climate policy.
PREREQUISITE: GRADUATE OR SENIOR STANDING AT RSMAS, OR PERMISSION OF INSTRUCTOR.

RSM571 Special Topics
1- 4 credits Offered By Announcement Only
Lectures and research projects in special topics related to Marine and Atmospheric Science.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

RSM572 Special Topics
1- 4 credits Fall & Spring Semester & First & Second Summer Session
Lectures and research projects in special topics related to Marine and Atmospheric Science.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

RSM600 Research Ethics
0 credit Fall Semester
The NIH Guide for Grants and Contracts stipulates that Institutions receiving support for National Research Service Award Training Grants are required to develop a program in the principles of Scientific Integrity. The University of Miami Rosenstiel School has chosen to respond to this requirement with this course. This course must be taken during the first semester in the Department or Program. This is a six-hour course and will be given in two sessions of three hours each.

RSM610 Marine and Atmospheric Science Colloquia
0 credit Fall & Spring Semester
An interdisciplinary series of seminars presented by various faculty on current research projects. Course consists of one 1-hour seminar per week. All students are required to register for this course at least once and be expected to attend two consecutive semesters.

RSM620 Object-oriented Programming and Agent-based Modeling
3 credits Spring Semester
Basics of object-oriented programming using Java, including Java statistical packages, and hands-on development of agent-based simulation models for social, economic, biological and physical sciences. Includes introductions to automaton and individual-based models.
PREREQUISITE: STUDENTS MUST BE COMMITTED TO RAPID LEARNING TO ADVANCED LEVELS IN A SHORT TIME. ONLY 8 STUDENTS PER CLASS DUE TO FACILITY LIMITATIONS.

RSM671 Advanced Studies
1- 4 credits Offered By Announcement Only
Supervised study or advanced special topics.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
BMB501 Senior Seminars
1 credit  
Fall & Spring Semester
Students attend seminars of their own choice by visitors. Faculty or graduate students on recent research topics in Biochemistry and Molecular Biology or any other discipline in the basic biomedical sciences. Students write short reports on these seminars and critically evaluate the presentations. This course can be taken more than once.  
PREREQUISITE: BMB 506

BMB506 Principles of Biochemistry and Molecular Biology
0-3 credits  
Fall Semester
Protein structure and function, enzyme mechanism and kinetics, and metabolism, focusing on energy metabolism and central concepts of metabolic regulation and of molecular biology including nucleic acid structure, protein synthesis, and DNA replication. (Not open to students with credit in BMB 401 or 406; for undergraduate honors credit or graduate student not majoring in biochemistry.  
PREREQUISITE: A GRADE OF B- OR HIGHER IN CHM 202 IS A PREREQUISITE

BMB507 Proteins and Enzymes
3 credits  
Spring Semester
Course analyzes the folding and binding of proteins, kinetics and mechanisms of enzyme action. For honors undergraduates. Not open to students in BMB 407.  
PREREQUISITE: BMB 406 OR 506 OR PERMISSION OF INSTRUCTOR; FOR UNDERGRADUATE HONORS CREDIT OR GRADUATE STUDENTS NOT MAJORING IN BIOCHEMISTRY.

BMB509 Molecular Biology of the Gene I
3 credits  
Fall Semester
Biochemical processes involved in the propagation and expression of genetic information in both prokaryotes and eukaryotes. Basic cellular processes of DNA replication, repair, genetic recombination, RNA transcription and processing, protein synthesis, control of gene expression, cell differentiation, and recombinant DNA technology. Reading includes both textbook assignments and original research papers.  
PREREQUISITE: BMB 506 OR PERMISSION OF INSTRUCTOR

BMB511 Topics in Applied BCH and Molecular Biology
1-3 credits  
Fall & Spring Semester & First & Second Summer Session
Selected topics from the fields of applied and pure biochemistry and molecular biology taught as a tutorial. Permission from Dr. Richard Myers is required for this course.  
PREREQUISITE: BMB 406 OR 506 AND PERMISSION OF INSTRUCTOR.

BMB545 Research Problems in Biochemistry and Molecular Biology
2-3 credits  
Fall & Spring Semester & First & Second Summer Session
Laboratory research problems in various fields of biochemistry, including literature search, experiment design, data gathering, and evaluation or results. Permission from Dr. Richard Myers is required for this course.  
PREREQUISITE: BMB545 (IN THE FIELD, REQUIRES PERMISSION OF THE INSTRUCTOR TO REGISTER, BUT NOT LIMITED TO ONLY ONE STUDENT).

BMB601 Research Journal Club.
1 credit  
Fall & Spring Semester
All registered BMB students must participate in the Journal Club/Seminar. Students are required to critically review published paper(s) of their choice and describe in detail the findings described therein. Senior students will present their own research.  
PREREQUISITE: NONE
BMB609 Advanced Biochemistry and Molecular Biology
3 credits
Fall Semester
This course is a continuation course for BMB 616. It covers essentially the same topics as BMB 616 but at a more advanced level. It brings the student to the forefront of research in Molecular Biology. The course material is discussed exclusively in the form of original research papers. Based on this experience, students are required to propose experimental approaches to biological problems and defend them.
PREREQUISITE: BMB 616.

BMB610 Advanced Topics in Biochemistry
1-5 credits
Fall & Spring Semester
Senior seminars designed to cover in depth recent developments in the field of biochemistry with the purpose of keeping advanced graduate students abreast with new theoretical and experimental findings. General subjects such as mechanisms of enzyme action, oxidative phosphorylation, active transport, metabolic controls and disorders, steroid biochemistry, and biochemical genetics are discussed. The detailed program is announced annually. Majors in Biochemistry and Molecular Biology are expected to take this course each semester in their second and third years.
PREREQUISITE: BMB 506 AND DEPARTMENTAL PERMISSION.

BMB614 Molecular Genetics
2 credits
Spring Semester
This course deals with mechanisms and fundamental concepts of genetic inheritance. The first part of the course is devoted to the genetics of bacteria and bacteriophages. Topics include genetic complementation, recombination, suppression, transposition, conjugation, transformation, transduction, and regulation of prokaryotic gene expression. The second part of the course covers selected topics in eukaryotic genetics (including molecular genetics of yeast, mitochondria, Drosophila, mice and humans). Problem solving is emphasized in homework and exams. The objective of the course is to provide students with an appreciation of the value of molecular genetics as a tool they can use to solve a wide variety of problems in biomedical research.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

BMB615 Structural biology and applications to drug discovery
2 credits
Spring Semester
This course focuses on the relationships between structure and function in biological macromolecules, and how this knowledge has led to the discoveries of new drugs.

BMB616 Macromolecular Biophysics and Drug Design
4 credits
Spring Semester
This course focuses on the relationships between structure and function in biological macromolecules. The topics discussed fall into three general areas: nucleic acid-protein interactions; membrane proteins; and components of the immune system.

BMB617 Readings in Molecular Biology
1 credit
Fall Semester
Discussion of classical papers in molecular biology beginning with the concept of the gene and continuing into modern studies. Format consists of student presentations and group discussions.
PREREQUISITE: BMB 506 OR EQUIVALENT, OR PERMISSION OF INSTRUCTOR.
BMB631 Special Work
1-3 credits  Fall & Spring Semester & First & Second Summer Session
Special work, lecture, or laboratory or a combination of these, as determined by advisor in accord with student's individual interest.
PREREQUISITE: APPROVAL OF COMMITTEE.

BMB645 Research Problems in Biochemistry, Cell and Molecular Biology
2-3 credits  Fall & Spring Semester & First & Second Summer Session
Laboratory research problems in various areas of biochemistry, cell biology, and molecular biology, including literature search, experimental design, data gathering, and evaluation of results. This course is the mechanism by which graduate laboratory rotations are done in preparation for selection of Ph.D. mentor.
PREREQUISITE: BMB 506 OR EQUIVALENT OR PERMISSION OF INSTRUCTOR.

BMB680 Research Ethics
0 credit  Fall Semester
The NIH Guide for Grants and Contracts stipulates that Institutions receiving support for National Research Service Award Training Grants are required to develop a program in the principles of Scientific Integrity. This program should be an integral part of the proposed training effort. The University of Miami School of Medicine has chosen to respond to this requirement with this course. This course must be taken during the first semester in the Department or Program. This is a six-hour course and will be given in two sessions of three hours each.
PREREQUISITE: PERMISSION OF THE GRADUATE ADVISOR.

BMB710 Master's Thesis
1-6 credits  Fall & Spring Semester & First & Second Summer Session
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

BMB720 Research in Residence
0 credit  Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in BMB 710 (usually six credits). Credit not granted. May be regarded as full time residence.

BMB730 Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor but not for less than a total of 24. Not more than 12 hours of BMB 730 may be taken in a regular semester, nor more than six in a summer session. Where a student has passed his/her (a) qualifying examinations, and (b) is engaged in an assistantship, he/she may still take the maximum allowable credit stated above.

BMB740 Doctoral Dissertation- Post Candidacy
1-12 credits  Fall Semester
PREREQUISITE: NONE
BMB750 Research in Residence
0 credit                     Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

BIOSTATISTICS

BST510 Introduction to Statistical Collaboration
4 credits                  Fall & Spring Semester
This course will introduce students to the art of statistical collaboration. The class will be highly interactive and will include an orientation to the process of statistical collaboration, individual and group assessment of the same consulting projects, and the completion of an individual "live" statistical collaboration project. For the final, live collaboration project, students will meet with the faculty and/or staff of the University of Miami who contributed their particular assigned consulting project(s). Students will need to research different statistical methods to find the best, feasible approach to address the particular consulting project. Students will present their plans for their own consulting projects in class and also help in the discussion/exploration of approaches for other student's consulting projects during class time. After finalization of the analysis plan the student will complete the statistical analyses described within the plan and create a final report.
PREREQUISITE: COMPLETE OF EPH 501, 502 OR PERMISSION OF INSTRUCTOR/PROGRAM

BST525 Survey of Statistical Computing
3 credits               Spring Semester
This three credit course aims to familiarize students with the basic use of SAS and R for routine statistical analysis and prepare them for more advanced courses and/or thesis research. Statistical computation will be illustrated with examples in medical research, biological study and business. The focus of the course is on the computing environment, therefore a thorough discussion of statistical theories will not be provided. It is expected that students will already be prepared statistically.
PREREQUISITE: EPH 501, 502, 603 (OR PERMISSION OF INSTRUCTOR)

BST575 Introduction to Generalized Linear Models
3 credits               Spring Semester
GLM's are an extension of the standard linear model to permit more general outcomes. In this class, we will study GLM's in detail. By the end of the course, we will examine recent extensions of GLMs. We will provide a unifying framework for formulation, estimation and inference. Throughout the course, real data applications from medicine will be used and extensive use of the R programming language will be made to implement ideas discussed.
PREREQUISITE: EPH 501, 502, 603

BST630 Longitudinal and Multilevel Data
3 credits            Fall Semester
PREREQUISITE: EPH 501 AND 502 AND INSTRUCTOR PERMISSION

BST640 Modern Numerical Multivariate Methods
3 credits            Spring Semester
PREREQUISITE: COMPLETION OF EPH 603/605 OR BST 525 OR BST 575, PERMISSION OF INSTRUCTOR
BST650 Topics in Biostatistical Research
1 credit  Fall & Spring Semester
PREREQUISITE: MS IN BIOSTATISTICS & PHD IN BIOSTATISTICS STUDENTS (BST) OR PERMISSION OF INSTRUCTOR

BST730 Doctoral Dissertation (pre-candidacy)
1-12 credits  Fall & Spring Semester & First & Second Summer Session

BST740 Doctoral Dissertation (Post-Candidacy)
1-12 credits  Fall & Spring Semester & First & Second Summer Session

BST750 Research in Residence
0 credit  Fall & Spring Semester & First & Second Summer Session

CANCER BIOLOGY

CAB601 CAB Student Seminar
1 credit  Fall Semester
This course offers instruction about the fundamental elements of scientific speaking. The ability to communicate effectively is essential for scientists. Using a series of sample-based lectures and discussion groups, students will be exposed to various oral presentations. In addition, during the first year, all students will be asked to present a 20 minute seminar following each of their rotation projects. Once students enter a research laboratory, students will be required to present their research each year as a one hour seminar.

CAB602 Approaches to Understanding Cancer
2 credits  Fall Semester
This interactive lecture course will teach students specific methodologies used to solve problems in cancer research. By using specific examples of basic and clinical avenues of research students will be taught the use of various approaches to address problems in cancer biology, i.e., reasoning and logic. The overall goal is to expose students to how different approaches are used and integrated to solve specific research questions and the critically interpret experimental design and data. The use and advantages of various approaches, e.g., biochemical, molecular, genetic, immunological, epidemiology, and the use of model systems e.g., cell and animal models will be discussed. Methods used in clinical trials will be presented. Emphasis will be placed on research strategy and design, limitations and strengths of various techniques.

CAB603 CAB Clinical Oncology
2 credits  Fall Semester
Year 1: During the first year students will attend a series of lectures by CAB physician mentors that will discuss clinical aspects of cancer treatment for specific patients with an emphasis on continuity of care of newly diagnosed patients between disciplines. Students will attend existing Sylvester Cancer Center tumor boards on a rotating monthly basis to understand how the treatment of cancers varies depending on histology.
CAB604 Scientific Reasoning and Logic in Cancer Biology: Bench to Bedside
3 credits Spring Semester
One aspect of the Cancer Biology PhD Program is to train students in the application of basic research to clinical problems i.e., translational research. The goal of this course is to expose students to the scientific reasoning the logic behind solving problems in clinical cancer research. The philosophy of this course is to teach students how knowledge obtained from basic research laboratories is applied to clinical problems including prevention, diagnosis, prognosis and therapeutic treatment of cancer. This course has 11 weekly segments, each of which has a different theme plus student presentations.

CAB605 Tumor Boards
1 credit Fall Semester
In the spring of their first year, students will attend Tumor Boards at UM/ Sylvester. This treatment planning approach in which a number of oncologists who are experts in different specialties review and discuss the medical condition and treatment options of a patient. It will allow the students to interact with physicians and learn how pathologists, surgeons, medical oncologists and radiation oncologists review specific cases and create customized treatment plans. Examples of cases include patients with Solid tumors (i.e., Breast, Colon, Liver, Prostate), Hematologic tumors (i.e., Leukemia, Lymphoma), and Sarcomas (i.e., osteosarcoma, soft tissue).

CAB606 Seminar Courses I
1 credit Fall & Spring Semester
FIRST YEAR students must attend the Program seminars and will be graded pass/ fail based on their attendance.

CAB611 Accelerated Basic Science Medical Curriculum
1-18 credits Fall Semester
Beginning in the latter part of June each year, extending to the middle of February of the ensuing year, the following accelerated and intensive complete basic science medical curriculum is offered: Embryology, Gross Anatomy, Histology, Biochemistry, Neuroanatomy, Biophysics and Neurophysiology, Systemic Physiology, Pathology, Medical Microbiology, and Pharmacology. Single grade will be entered on the graduate transcript for this course.
PREREQUISITE: ADMISSION TO THE COMBINED M.D. /PH. D. DEGREE PROGRAM

CAB612 Special Topics in Cancer Research - Viral Oncology and Tumor Immunology Module
2 credits Spring Semester
This module emphasized state of the art knowledge of each discipline, student participation in a problem based learning context. Topics include viral carcinogenesis and epidemiology, Hepatitis, Herpes, Epstein Barr and Human Papilloma Viruses, Kaposi's Sarcoma, viral induced lymphomas, viral oncolysis, and mechanisms of anti-tumor immunity.
PREREQUISITE: NONE

CAB613 Special Topics in Cancer Research - Molecular Cancer Therapeutics Module
2 credits Spring Semester
This module explores the signal transduction pathways critical for cancer cell proliferation and survival that may provide new therapeutic targets, approaches for identification and validation of molecular targets within these pathways. Students are introduced to the strategies used in the discovery and design of biological and drug based therapies, and the implementation of clinical trials.
PREREQUISITE: NONE
CAB614 Special Topics in Cancer Research - Cancer Epidemiology, Prevention & Behaviora
2 credits  
Spring Semester
This module explains the goals and techniques of researchers in the fields of cancer epidemiology and biobehavioral oncology. These include understanding the social, environmental, and biological reasons for cancer disparities among different populations. Cancer epidemiologists seek to define the molecular and genetic mechanisms of cancer risk and progression with the aim of developing predictive models in treatment response. The following themes in biobehavioral oncology are explored: psychosocial intervention, biobehavioral and psychosocial intervention to the community; health behavior change and biobehavioral mechanisms in persons at risk for and diagnosed with cancer; predictors of QOL and late effects of cancer treatment and development of preventative interventions.
PREREQUISITE: NONE

CAB615 Special Topics in Cancer Research - Breast and Genitourinary Cancers Module
2 credits  
Spring Semester
This module highlights key aspects of the cellular and molecular mechanisms of breast, prostate, renal and bladder cancers as well as providing an overview of cancer detection, diagnosis, and therapy. Emerging research opportunities are identified. Topics include estrogen receptor and androgen receptor signaling, cancer progression, endocrine therapies and resistance. Key signaling pathways and the biology of metastasis will be discussed.
PREREQUISITE: NONE

CAB617 Advance Course on Viruses, Immunity, and Cancer
3 credits  
Spring Semester
This is an advanced course on Viral Oncology and Tumor Immunology and Immunotherapy that emphasizes state of the art knowledge of each discipline, student active participation in a problem based learning-like context, and national expert visitor teaching. The structure of the classes is based on the concept of Problem Based Learning.
PREREQUISITE: OPEN TO 2ND YEAR STUDENTS FROM ANY GRADUATE PROGRAM

CAB620 Dialogues with Cancer Clinicians (PIBS Module)
1 credit  
Fall & Spring Semester
This module features physician mentors of the Cancer Biology Graduate Program who will discuss clinical aspects of cancer treatment with an emphasis on continuity of care of newly diagnosed patients between disciplines and will articulate unmet clinical needs and questions. Mentors will provide clinical perspectives on their areas of specialization as it relates to patient care including diagnosis, staging, therapy, and outcomes.
PREREQUISITE: NONE

CAB630 Colloquia in Clinical Cancer Research
2 credits  
Fall Semester
Students will attend Colloquia at which faculty members present seminars on their current clinical research topics and methods of investigation. Here students will learn the rationale and methodologies that researchers are using to approach a problem in clinical cancer research. Topics will cover the areas of prevention, control, diagnosis (molecular and microscopic pathology), prognosis and therapeutics.
CAB631 Lab Rotations  
1-6 credits Fall Semester  
During the first year students will be required to carry out three research rotations. The students will then select their PhD advisor in June of their first year. The evaluation will be based on an oral presentation (20 minutes and 10 minutes for questions) by the student to a committee consisting of three faculty members, other than the rotation advisor. The rotation mentor will submit a confidential written evaluation of the student in a standard format to be designed by the Curriculum committee. It will include a statement regarding the willingness of the mentor to accept the student into the lab for their thesis research.

CAB650 Logic and Reasoning in Translational Cancer Research: Bench to Bedside Part 1  
3 credits Spring Semester  
An important facet of the Cancer Biology PhD Program is the training of students in the interrelationships between basic research and clinical medicine i.e., translational research. The goal of this advanced course is to expose students to the scientific reasoning and logic underlying problem solving in clinical cancer research. This course will instill in students the ability to integrate information and develop the thought processes necessary to critically evaluate information in the literature and experimental approaches, conceptualize problems in the field and identify areas for scientific exploration. This course is divided into two parts. In Part I Bench to bedside, students learn how the knowledge obtained from basic research laboratories is applied to clinical problems including prevention, diagnosis, prognosis and therapeutic treatment of cancer. Specific examples of translational research, i.e., laboratory to clinic will be emphasized. In part II Bedside to Bench, students learn the key role of clinical observation in identifying basic research problems. PREREQUISITE: MDB 665, MINIMUM OF TWO SPECIAL TOPICS MODULES (CAB 612, 613, 614, 615), CAB 605, CAB 620

CAB651 Logic and Reasoning in Translational Cancer Research: Bedside to Bench Part 2  
3 credits Fall & Spring Semester  
An important facet of the Cancer Biology PhD Program is the training of students in the interrelationships between basic research and clinical medicine i.e., translational research. The goal of this advanced course is to expose students to the scientific reasoning and logic underlying problem solving in clinical cancer research. This course will instill in students the ability to integrate information and develop the thought processes necessary to critically evaluate information in the literature and experimental approaches, conceptualize problems in the field and identify areas for scientific exploration. This course is divided into two parts. In Part I Bench to bedside, students learn how the knowledge obtained from basic research laboratories is applied to clinical problems including prevention, diagnosis, prognosis and therapeutic treatment of cancer. Specific examples of translational research, i.e., laboratory to clinic will be emphasized. In part II Bedside to Bench, students learn the key role of clinical observation in identifying basic research problems. PREREQUISITE: MCP 665, MINIMUM OF TWO CAB 610 MODULES, CAB 605, CAB 620
CAB680 Research Ethics
0 credit  Fall Semester
The NIH Guide for Grants and Contracts stipulates that Institutions receiving support for National Research Service Award Training Grants are required to develop a program in the principles of Scientific Integrity. This program should be an integral part of the proposed training effort. The University of Miami School of Medicine has chosen to respond to this requirement with this course. This course must be taken during the first semester in the Department or Program. This is a six-hour course and will be given in two sessions of three hours each.
PREREQUISITE: PERMISSION OF THE GRADUATE ADVISOR.

CAB710 Master's Thesis
1-6 credits  Fall & Spring Semester & First Summer Session
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

CAB720 Master's Research in Residence
0 credit  Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in CAB 710 (usually six credits). Credit not granted. May be regarded as full time residence.

CAB730 Dissertation Research
1-12 credits  Fall Semester
Required of all candidates for the Ph.D. The student will enroll for credits as determined by the Office of Graduate Studies but not less than a total of 24. Not more than six in the summer. If a student has a) passed qualifying exam(s) and (b) is engaged in an assistantship, he/she may still take the maximum allowable credits.

CAB740 Doctoral Dissertation- Post Candidacy
1-5 credits  Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: CAB 730

CAB750 Research in Residence
0 credit  Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit is not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.
PREREQUISITE: CAB 740

EPIDEMIOLOGY & PUBLIC HEALTH

EPH501 Medical Biostatistics I
3 credits  Fall Semester
Introduction to probability and statistics including descriptive statistics, tests of hypothesis, regression analysis, contingency tables, nonparametric tests, and life tables. Students gain hands-on experience in the analysis of medical data using several computer systems and at least one of the different statistical packages such as: BMDP, SAS, PSTAT, SYSTAT, and Minitab.
PREREQUISITE: ABILITY TO USE A SPREADSHEET PROGRAM ON A PERSONAL COMPUTER. OPEN ONLY TO EPH MAJORS.
EPH502 Biostatistics II
3 credits
Spring Semester
Continuation and elaboration of EPH 501. Topics include design of factorial experiments, analysis of variance and variance components, multiple linear regression, and life tables.
PREREQUISITE: EPH 501 OR PERMISSION OF INSTRUCTOR. OPEN ONLY TO EPH MAJORS.

EPH503 Applied Data Management and Analysis
3 credits
First & Second Summer Session
The course is designed to introduce students to applied quantitative methods through both lecture-based and experimental strategies. Emphasis will be placed on data collection, data management, and conceptual use of various analytic techniques.
PREREQUISITE: EPH 501, EPH 502 OR PERMISSION OF INSTRUCTOR

EPH512 Global Health
3 credits
Fall Semester
This seminar examines current global public health issues, governance and decision-making challenges for the 21st Century across developing, transitioning, and developed countries. Topics of discussion include new actors for world health in the era of globalization; linking human development, poverty and health inequities; social, cultural and ethical considerations for health planning; role of industry, trade and public health; evidence based research for improved global health initiatives; foreign policy and health security challenges associated with emergence and re-emergence of infectious diseases and public and private partnerships in global health. Open only to EPH majors.
PREREQUISITE: OPEN ONLY TO EPH MAJORS.

EPH513 International Health Systems
3 credits
Spring Semester
Students will study international health from a broad prospective of global health issues and international health systems. This course will include a critical analysis of health systems in both developing and developed countries through comparison with the World Health Organization's model and the health system in the United States. A variety of health factors will be examined including the role of public health and public health funding.
PREREQUISITE: PERMISSION OF PROGRAM DIRECTOR OR ADMINISTRATOR FOR REGISTRATION

EPH514 Mental Health and Mental Illness: Public Health Perspective
3 credits
Fall Semester
The purpose of this course is to give an overview of mental health and illness as a public health issue. This will include an analysis of how mental illness became a major public health concern both in the United States and Globally. The use of population-based epidemiological studies to inform the development of public policy will also be explored. In addition, an analysis of mental health programs in various community settings such as schools, the workplace and in the context of disasters will provide an opportunity to understand how theories regarding the etiology of mental illness are applied in the development of prevention and intervention programs.
PREREQUISITE: PERMISSION OF PROGRAM DIRECTOR FOR NON-EPH MAJORS.

EPH520 Health Education and Behavior
3 credits
Spring Semester
Educational processes with special emphasis on the social and cultural determinants of health behavior, health education as a process of social change, and community based health education organizations. Open only to EPH majors.
PREREQUISITE: OPEN ONLY TO EPH MAJORS.
EPH521 Fundamentals of Epidemiology
3 credits Fall Semester
Principles and methods of epidemiology. Descriptive epidemiology, environmental and other risk factors, detection of outbreaks, basic demography, and etiologic studies.
PREREQUISITE: PERMISSION OF THE INSTRUCTOR. OPEN ONLY TO EPH MAJORS.

EPH522 Applied Health Education
3 credits Fall Semester
The goal of this course is to introduce students to the principals of Applied Health Education utilizing the theoretical background they received in the course prerequisite, EPH 520. Means of affecting health behavior change will be examined as well as methods of health communication, needs assessment and issues of cultural competency. Students will explore various settings in which health educational material is distributed including clinical settings, the Internet and through the mass media. Students will develop their own binder of high quality health educational information and develop their own educational material on a topic of their choice.
PREREQUISITE: EPH 520. OPEN ONLY TO EPH MAJORS.

EPH525 Ethical Issues in Epidemiology
3 credits Fall Semester
The course identifies and analyzes ethical issues in epidemiologic practice and research. Issues include data acquisition and management, confidentiality, valid consent, advocacy, public policy, subgroup stigma, research sponsorship, conflicts of interest, communication of risk, and international and intercultural difference.
PREREQUISITE: EPH 501 AND 521 OR PERMISSION OF INSTRUCTOR. OPEN ONLY TO EPH MAJORS.

EPH540 Urban Environment and Public Health
3 credits Spring Semester
PREREQUISITE: PERMISSION OF INSTRUCTOR

EPH541 Integrated Aspects of Environmental Health
3 credits Spring Semester
Interdisciplinary scope of environmental health problems. Development of a practical, dynamic model for integrating fundamental concepts from a variety of environmental disciplines. Open only to EPH majors.
PREREQUISITE: OPEN ONLY TO EPH MAJORS.

EPH542 Oceans and Human Health
3 credits Fall Semester
This course provides students with introductory knowledge of the broad and relatively young field of Oceans and Human Health. The focus is the present, future, and potential effects of oceanic processes and marine organisms on human health and wellbeing. These diverse factors reflect the physical, chemical, biotic and social processes which require an integration of information and knowledge from the medical, marine, and social sciences. Of growing concern in this rapidly-developing area of study is the human health effects from exposure to substances that occur widely in marine ecosystems including synthetic organic chemicals, polycyclic aromatic hydrocarbons (PHAs), metals (both introduced and anthropogenic), marine toxins, and pathogens.
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.
EPH561 Public Health Nutrition
3 credits Spring Semester
This course provides a dynamic, interactive approach to public health designed to prepare students in basic policy, epidemiology, and health education related to nutrition. Recognizing the multiple social, cultural, environmental, and physiological factors leading to nutritional disease. The course includes experts from a variety of disciplines. Public health nutrition addresses issues germane to the public's health by elucidating their extent, determinants and consequences, and the policies and programs to address them. Open only to EPH majors.
PREREQUISITE: OPEN ONLY TO EPH MAJORS.

EPH562 Child Policy
3 credits Spring Semester
PREREQUISITE: PERMISSION OF PROGRAM DIRECTOR

EPH571 Maternal and Child Health
3 credits Spring Semester
Preventative and therapeutic concepts pertinent to the reduction of morbidity and mortality among mothers and their children.
PREREQUISITE: EPH 521 OR PERMISSION OF THE INSTRUCTOR. OPEN ONLY TO EPH MAJORS.

EPH572 Public Health Law
3 credits Fall & Spring Semester
This course is designed for non-law students studying in epidemiology and public health. The course will begin with a general overview of the fundamental principles and processes of the US legal system, focusing on public health law and ethics. Topics will include privacy, communications, screening and vaccinations, economic regulations and public health reform.
PREREQUISITE: PERMISSION OF INSTRUCTOR(S). OPEN ONLY TO EPH MAJORS.

EPH580 Ecology and Control of Vector-Borne Diseases
3 credits Spring Semester
PREREQUISITE: PERMISSION OF EPH PROGRAM TO REGISTER

EPH581 Advanced Topics
0-4 credits Offered By Announcement Only
Subject matter offering based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule following the title "Advanced Topics".
PREREQUISITE: CORE REQUIREMENTS FOR MPH PROGRAM OR PERMISSION OF INSTRUCTOR. OPEN ONLY TO EPH MAJORS.

EPH584 Special Topics
3 credits Fall & Spring Semester & First & Second Summer Session
This course is designed to allow the listing of special topics within the Department of Epidemiology and Public Health and cross-list topics with other departments' offerings.
PREREQUISITE: PERMISSION OF GRADUATE PROGRAM DIRECTOR. COURSE PRE-REQUISITES WILL VARY DEPENDING ON THE COURSE TOPIC ASSIGNED.
EPH585 Perinatal Epidemiology
3 credits  Fall & Spring Semester
This survey course includes vital statistics data and sources, prenatal care, the influence of maternal and paternal age, maternal obesity, smoking, and alcohol use in pregnancy outcomes, infertility and assisted conceptions - including multiple births, birth defects, cerebral palsy, prematurity, preeclampsia and maternal and infant mortality.
PREREQUISITE: EPH 521 AND PERMISSION OF INSTRUCTOR.

EPH600 Research Seminar
1- 3 credits  Fall & Spring Semester & First & Second Summer Session
Course consists of bi-weekly research seminars. Seminar format is individual student-led presentations and discussions with faculty supervision. Topics may include epidemiologic methods, analytic strategies, study design, conduct of human subjects research, bio-ethics, and other pertinent topics. Ph.D. students are required to complete 3 credit hours of EPH 600 prior to graduation.
PREREQUISITE: ADMISSION TO THE PH.D. IN EPIDEMIOLOGY PROGRAM. OPEN ONLY TO EPH MAJORS.

EPH603 Statistical Methods in Epidemiology
3 credits  Fall Semester
Advanced statistical methods used in analyzing data from epidemiologic investigations. Topics include Mantel-Haenszel chi-square, interaction, standardization of rates, incidence density, logistics regression, and other special topics.
PREREQUISITE: EPH 501 AND 521. OPEN ONLY TO EPH MAJORS.

EPH604 Clinical Trials
3 credits  Spring Semester
Planning, design, analysis, and data management for clinical therapeutic and prophylactic trials. Illustrations are provided through case examples.
PREREQUISITE: EPH 502 AND PERMISSION OF INSTRUCTOR. OPEN ONLY TO EPH MAJORS.

EPH605 Statistical Methods in Epidemiology II
3 credits  Spring Semester
Continuation and elaboration of EPH 603. Advanced statistical methods used in analyzing data from epidemiologic investigations. Topics include Kappa statistics, life tables, survival analyses, logistic regression, Poisson regression, log linear models, clusters, meta-analysis, and other special topics.
PREREQUISITE: EPH 603 AND PERMISSION OF INSTRUCTOR. OPEN ONLY TO EPH MAJORS.

EPH609 Tobacco Control and Health: Consumption, Health Effects and Policy
3 credits  Spring Semester
PREREQUISITE: PERMISSION OF EPH PROGRAM TO REGISTER

EPH610 Public Health Surveillance Systems
3 credits  Fall Semester
The goal of this course is to make students aware of all aspects that must be considered when designing or working with a Public Health Surveillance System (PHSS). The lectures will concentrate on the different types of PHSS, data base structures, practical design elements, data gathering strategies, quality control and evaluation considerations and the role of PHSS within the public health community. Additionally, students will be given the opportunity to utilize their analytical skills and demonstrate their mastery of statistical software packages by performing three preliminary analysis of a real PHSS data set.
PREREQUISITE: EPH 501 AND 521 OR PERMISSION OF PROGRAM DIRECTOR
EPH611 Cancer Epidemiology
3 credits Spring Semester
This course covers the basic epidemiology of cancer. Major sites and exposures are stressed, highlighting descriptive, etiologic and preventive aspects. A major course project and one final exam are included.
PREREQUISITE: PERMISSION OF INSTRUCTOR. OPEN ONLY TO EPH MAJORS.

EPH612 Energy Balance I: Foundations of Nutrition and Physical Activity
3 credits Fall Semester
This course will examine the foundations of Nutrition and Physical Activity Epidemiology, including; population patterns and trends, epidemiological theories, assessment and research methods, bio-psychosocial and ecological determinants, major epidemiological studies, and interventions to promote healthy eating and physical activity. The course pre-requisite is successful completion of EPH 521 Fundamentals of Epidemiology or an equivalent course determined by the instructor.
PREREQUISITE: EPH 521 FUNDAMENTALS OF EPI

EPH613 Energy Balance II: Energy Balance and Health
3 credits Spring Semester
This course will build upon the Energy Balance I course content (EPH 612), focusing on health outcomes associated with positive and negative energy balance, including obesity, chronic diseases, and other related topics, such as energy balance across the lifespan (children, younger adults, and older adults). As in Energy Balance I, major epidemiological studies and theories will be examined throughout the course. The course pre-requisites include successful completion of EPH 521 Fundamentals of Epidemiology (or an equivalent course) and successful completion of EPH 612 Energy Balance I.
PREREQUISITE: EPH 612 ENERGY BALANCE I AND EPH 521 FUNDAMENTALS OF EPI

EPH614 Introduction to Disease Prevention and Health Promotion
3 credits Fall & Spring Semester
This course will introduce students to the science of prevention and health promotion. More specifically, through didactic presentations, group discussions, article readings and critiques, and a term project, this course will focus on providing students with an overview of: the top preventable causes of disease in the U.S., the etiology of disease (with a focus on the top preventable causes of disease in the U.S.) across the lifespan, the role of prevention theories in the development of preventive interventions, and the role of methodology in prevention science. The course will also provide an overview of efficacious/effective preventive interventions, including (but not limited to): family community and school level interventions. Examples from the fields of obesity, drug use, smoking, and HIV will be used to illustrate the course learning objectives detailed below.
PREREQUISITE: COMPLETION OF EPH 520 OR PERMISSION FROM PROGRAM TO ENROLL

EPH615 Determinants of Health and Health Disparities Across the Life Course
3 credits Spring Semester
PREREQUISITE: EPH 614 OR PERMISSION OF EPH PROGRAM TO REGISTER

EPH620 Cardiovascular Disease Epidemiology and Prevention
3 credits Fall Semester
Course aims to teach and train MPH students in the epidemiology and prevention of cardiovascular and cerebrovascular diseases which are the leading causes of morbidity and mortality among the adult U.S. population. Essential knowledge for those working in the area of public health is emphasized.
PREREQUISITE: EPH 501 AND 521 OR PERMISSION OF INSTRUCTOR. OPEN ONLY TO EPH MAJORS.
EPH621 Chronic Disease Epidemiology
3 credits  Spring Semester
The major chronic diseases (e.g. Heart Disease, Cancer, diabetes) their population impact and methods of prevention. Specialized problems associated with chronic disease studies are also included.
PREREQUISITE: EPH 521. OPEN ONLY TO EPH MAJORS.

EPH622 Common Pathways: Infectious Diseases
3 credits  Fall Semester
This course emphasizes surveillance, investigation, control and global health problems related to infectious diseases. Emphasis will be on the biology of infectious disease systems, development of study designs, epidemiological and biostatistical methods, and the employment of epidemiological methods for addressing major public health issues in international research.
PREREQUISITE: EPH 501 AND 521. OPEN ONLY TO EPH MAJORS.

EPH623 Epidemiology and Public Health Aspects of Diabetes Mellitus
3 credits  Spring Semester
This course presents an overview of the epidemiology and public health impact of an important chronic disease, diabetes mellitus (DM). Topics include the classification and descriptive epidemiology of DM and associated health complications, disease screening, evaluation of risk factors, methodological issues associated with DM research, DM among special populations, and the public health impact of DM in the U.S.
PREREQUISITE: EPH 521 OR PERMISSION OF INSTRUCTOR. OPEN ONLY TO EPH MAJORS.

EPH624 Advanced Applied Epidemiology
3 credits  Spring Semester
Principles and methods of analytical studies including case-control, cohort, and clinical trials. Emphasis is placed on quantization of influences of change, bias, and confounding in design, conduct, analyses, and interpretation of epidemiologic studies. Evaluation of cause-effect relationships is included.
PREREQUISITE: EPH 521 OR PERMISSION OF THE INSTRUCTOR. OPEN ONLY TO EPH MAJORS.

EPH625 Molecular and Genetic Epidemiology.
3 credits  Spring Semester
The course is the study of demography in relation to epidemiology, health and illness, including basic population structure, composition and trends and population methods and measures. The implications of demographic trends and policies for delivery of public health services are explored. Topics include population growth, emigration (especially to and from Florida), fertility, and the relation of demography to health and illness. Prerequisite: EPH 501 and 521 or permission of instructor.
PREREQUISITE: COMPLETION OF EPH 521 AND PERMISSION FROM PROGRAM DIRECTOR.
EPH628 Social Epidemiology of Drug Abuse
3 credits  
Spring Semester
This intersession course will provide students with a systematic and selective overview of conceptual approaches and research findings related to the impact of social context on substance use behavior. We will consider the social factors that shape the population distribution of drug use, abuse, and addiction and the related consequences. Each session will highlight a different area of research on the frontier of this nascent field. Through a combination of lectures and discussions, the course will focus on describing and understanding the association between social class, race and ethnicity, psychosocial factors, neighborhood and community characteristics, place, and life-course processes to the incidence and progression of drug use, abuse, and addiction and related health consequences.
PREREQUISITE: EPH 521 OR INSTRUCTOR PERMISSION

EPH630 Drug Abuse Epidemiology
3 credits  
Fall Semester
The purpose of this course is to educate students how to design, implement, and conduct studies of drug abuse epidemiology and its related scientific disciplines.
PREREQUISITE: EPH 501 AND 521. OPEN ONLY TO EPH MAJORS.

EPH631 Public Health Administration
3 credits  
Fall Semester
An overview of the historical background, philosophy, and purpose of public health. Relationship between government, law, and public health. Organization, management, and intergovernmental relationships of public health agencies in the United States at the federal, state, and local level. Basic principles of management, decision making, and prioritizing in public health are discussed. Overview of programs and services provided by public health organizations with emphasis on current public health issues and problems are also included. Open only to EPH majors.
PREREQUISITE: OPEN ONLY TO EPH MAJORS.

EPH639 Health Disparities in America
3 credits  
Fall Semester
This course will examine the social and societal factors that are fundamental in creating disparities in health. In addition, the course will focus on the formulation of public policy objectives to reduce and ultimately eliminate health disparities.
PREREQUISITE: PERMISSION FROM EPH PROGRAM ADMINISTRATION

EPH640 Basic Pathology and Patho-physiology
3 credits  
Fall Semester
The course emphasizes basic patho-physiological mechanisms and diseases of particular interest to students of public health. Students obtain an understanding of basic pathological processes, nomenclature of pathological findings, and common natural and unnatural diseases affecting various body systems. Observations of autopsies and the gross pathology of selected organs are also incorporated in the course.
PREREQUISITE: EPH 521 AND PERMISSION OF INSTRUCTOR. OPEN ONLY TO EPH MAJORS.
EPH641 Research Methods

3 credits  Fall Semester
Purpose of the course is to provide students with a sound understanding of the fundamental concepts and methods for conducting public health research. After a brief introduction to the philosophy of science, the major emphasis in the early portion of the course is on research conceptualization, design and measurement, with a particular focus on the logic of minimizing rival alternative explanations of finding for experimental and quasi-experimental studies.
PREREQUISITE: EPH 501, 521 OR PERMISSION OF INSTRUCTOR. OPEN ONLY TO EPH MAJORS.

EPH642 Survey Methods: Planning and Conducting Health Surveys

3 credits  Spring Semester
The purpose of this class is to introduce students to theories, principles, methods, and best practices of survey design, measurement, and sampling as applied to health surveys. Students develop an understanding of the survey research process including problem definition, strengths and limitations of survey research, survey design, survey sampling techniques, data entry and management, data analysis, and proper reporting of results.
PREREQUISITE: EPH 501, 521, AND 641 OR PERMISSION OF INSTRUCTOR. OPEN ONLY TO EPH MAJORS.

EPH644 Fundamentals of Program Evaluation

3 credits  Spring Semester
Fundamentals of Program Evaluation was developed as a survey course directed specifically at providing an overview of the broad area of program evaluation. At its base, program evaluation is the investigator of a program's characteristics and merits. In context of health care, the purpose of program evaluation is to provide information in the effectiveness of programs or interventions so as to optimize the outcomes, efficiency and quality of health care. Evaluation of a program is an essential part of the successful implementation and conduct of any health care project or intervention, and should ideally be designed along with the project itself. Program evaluation activities can use a wide range of methodologies (e.g., qualitative, quantitative), analyze different aspects of a program (e.g., structure, activities, organization), and have a large number of intended outcomes (e.g., achievement or program's goals objectives, extent of program impact, program cost).
PREREQUISITE: SUCCESSFUL COMPLETION OF EPH 501 AND EPH 521

EPH645 Behavioral Epidemiology

3 credits  Fall Semester
A sub-discipline of epidemiology with a principal focus on lifestyle behaviors that are health-enhancing or health-compromising. With a focus on health behavior rather than disease endpoints, behavioral epidemiology has a primary prevention orientation. This course explores epidemiologic approaches to description/intervention upon dietary behaviors, exercise, substance use behaviors (cigarettes, alcohol, illicit drugs), and sexual behaviors.
PREREQUISITE: EPH 521 AND PERMISSION OF THE INSTRUCTOR. OPEN ONLY TO EPH MAJORS.
EPH647 Community-based Participatory Research
3 credits Fall Semester
Community-based participatory research (CBPR) is methodology, increasingly popular in public health and other disciplines, which invites community collaboration throughout the research process from conceptualization of study focus to dissemination of findings. This course will provide an opportunity for medical and graduate students to better understand the process by which community members and academic researchers work collectively to address health disparities and influence social change.
PREREQUISITE: EPH 521 FUNDAMENTALS OF EPIDEMIOLOGY

EPH648 Multicultural Communities in a Globalized Society
3 credits Fall Semester
This course examines the relationship between multiculturalism and globalization and how these concepts impact education and the world at large. Topics include dimensions of human diversity, identities and acculturation; race and class; gender and power; children and youth; social inclusion and social justice; health disparities; poverty and work; racism and inequality.
PREREQUISITE: ENROLLMENT IN COMMUNITY & SOCIAL CHANGE MASTERS DEGREE PROGRAM OR PERMISSION OF INSTRUCTOR

EPH650 Health Economics for Evaluation and Policy
3 credits Spring Semester
This course centers on a discussion of the criteria used to evaluate the allocation of resources and analyze the behavior of two of the principal actors-consumers and firms. The principles of microeconomics are presented in the context of health care systems and markets. Numerous real-world issues and case studies are used to demonstrate economic decision-making techniques, especially for health care organizations and consumers.
PREREQUISITE: EPH 501 AND 521. OPEN ONLY TO EPH MAJORS.

EPH651 Survival Analysis in Clinical Trials
3 credits Fall Semester
Statistical methods for analysis and interpretation of survival data arising from clinical trials. Topics include survival curves, estimation of sample size, survival curves, proportional-hazard models, time dependent variables, and prognostic indices. PREREQUISITE: PERMISSION OF THE INSTRUCTOR AND EPH 501 AND 502. OPEN ONLY TO EPH MAJORS.

EPH652 Health Policy
3 credits Spring Semester
Part I will examine seven models encompassing different perspectives on public health: philosophy, political theory and politics, law, economic, science and information culture and religion, and organization and management, including how they relate and their relevance in formulating, implementing, and evaluating public policy. Part II will examine the policy making process including how issues reach the government agenda, how laws are formulated, and how the process affects substance. Part III describes the core elements of policy analysis including: problem definition; background; political, economic, and social landscape; development of policy options; and recommendation. It will also include discussions of how to find and analyze documents and data as well as discuss the financing of health care.
PREREQUISITE: PERMISSION OF PROGRAM DIRECTOR
EPH674 Advanced Epidemiologic Methods I
3 credits  Fall Semester
The fundamental concepts, principles, and methods of epidemiologic study designs will be presented at an advanced level. In addition, the practical issues in the design, conduct and analysis of epidemiologic studies and interpretation of research findings will be discussed. The emphasis will also include on application of the epidemiologic methods in the forms of journal article critique and research proposal development. The goal of this course is to present the advanced epidemiologic methods and their theoretical backgrounds to PhD students in fulfilling part of the PhD in Epidemiology degree.
PREREQUISITE: EPH 521 AND EPH 502; COREQUISITES EPH 603

EPH676 Advanced Epidemiological Methods II
3 credits  Spring Semester
This is the second course of 2-part course in advance epidemiologic methods. The fundamental concepts, principles, and methods of epidemiologic study designs will be presented at an advanced level. In addition, the practical issues in the design, conduct and analysis of epidemiologic studies and interpretation of research findings will be discussed. The emphasis will also include on application of the epidemiologic methods in the forms of journal article critique and research proposal development. The goal of this course is to present the advanced epidemiologic methods and their theoretical backgrounds to PhD students in fulfilling part of the PhD in Epidemiology degree.
PREREQUISITE: EPH 674 OR PERMISSION FROM THE INSTRUCTOR

EPH680 Practical Field Experience
1- 6 credits  Fall & Spring Semester & First & Second Summer Session
Practical field experience for MSPH/MPH students, e.g. an internship with a physician, public health department, clinic, school system, Health Center, or an ongoing epidemiological project.
PREREQUISITE: CORE REQUIREMENTS FOR MPH PROGRAM. OPEN ONLY TO EPH MAJORS.

EPH681 Geographic Information Systems in Public Health
3 credits  Spring Semester
Learn GIS techniques to interpret, analyze, and understand spatial patterns utilizing the software Arc View.
PREREQUISITE: OPEN ONLY TO EPH MAJORS.

EPH682 Advanced Individual Study
1- 3 credits  Fall & Spring Semester & First & Second Summer Session
Individual work on a special project under faculty guidance.
PREREQUISITE: PERMISSION OF THE DIRECTING FACULTY MEMBER AND THE DIRECTOR OF GRADUATE PROGRAMS. OPEN ONLY TO EPH MAJORS.

EPH699 Public Health Projects
1- 6 credits  Fall & Spring Semester & First & Second Summer Session
Research and/or design projects. Individual investigation of current public health problems. Required of all MPH students.
PREREQUISITE: PERMISSION OF MASTER'S PROGRAMS DIRECTOR AND COMPLETION OF AT LEAST 12 CREDITS IN EPH. OPEN ONLY TO EPH MAJORS.

EPH725 Continuous Registration--Master's Study
0 credit  Fall & Spring Semester & First & Second Summer Session
To establish residence for MPH students who are preparing for project presentation. Credit not granted. Regarded as full time residence.
EPH730 Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the PhD. The student will enroll for credit as determined by his/her advisor but not for less than a total of 24. Not more than 12 hours of EPH 730 may be taken in a regular semester, nor more than six in a summer session.

EPH740 Doctoral Dissertation- Post Candidacy
1-12 credits  Fall & Spring Semester & First & Second Summer Session

EPH750 Research in Residence
0 credit                     Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

HUMAN GENETICS & GENOMICS
HGG601 Seminar/Journal Club
1 credit                                                     Fall & Spring Semester
All registered students must participate in the Seminar/Journal Club. Students are required to review published papers and discuss in detail the findings described therein.
PREREQUISITE: NONE

HGG611 Accelerated Basic Science Medical Curriculum
1-18 credits    Fall & Spring Semester
Beginning in the latter part of June each year, extending to the middle of February of the ensuing year, the following accelerated and intensive complete basic science medical curriculum is offered: Embryology, Gross Anatomy, Histology, Biochemistry, Neuroanatomy, Biophysics and Neurophysiology, Systemic Physiology, Pathology, Medical Microbiology, and Pharmacology. A single grade will be entered on the graduate transcript for this course.
PREREQUISITE: ADMISSION TO THE COMBINED M.D./PH.D. PROGRAM

HGG620 Fundamentals of Human Genomics
2 credits                                                           Spring Semester
This course offers a survey of topics in human genomics, with an emphasis on the diversity of genetic variation, both normal and pathological, that is observed within modern populations. An overview of key molecular processes, mechanisms of mutation, and primate genome architecture is provided. Students are also introduced to select topics in microevolution and population genetics that are relevant to the study of human genetic disorders. The course is primarily lecture-based, with some supplemental readings from primary literature.
PREREQUISITE: NONE

HGG621 Fundamentals of Genetic Epidemiology
3 credits                                                           Spring Semester
This course provides an overview of genetic epidemiology. Basic concepts and methods will be covered including phenotype definition, evaluating evidence a trait in genetic, basic study designs (family and population-based), introduction to genetic linkage and association, candidate gene analysis and genome-wide studies, and approaches to localizing genetic variations associated with traits of interest. The course is primarily lecture-based with some discussions from primary scientific literature.
HGG630 Variation and Disease  
2 credits  
Spring Semester  
This course provides an overview of the science of genetics, including historical and modern approaches, with emphasis on the underlying mechanisms of human genomic variation and their relation to human disease. After taking this course the student will be able to list the different types of human genomic variation, explain the mechanism by which each occurs, and discuss the consequences of the variation. Where appropriate, specific examples of human disorders will be related to the variation. Topics include: chromosomal, biochemical, and DNA sequence variation, mitochondrial genome variation and epigenetic effects. The course structure consists of a combination of lectures and discussion of primary literature.

HGG631 Genes in Populations  
3 credits  
Fall Semester  
The course explores the relevant history and principals governing the behavior of genes in human populations. Topics include Hardy-Weinberg equilibrium; Mendelian, complex and quantitative traits; principals of selection and change in populations, neutral theory; and molecular evolution of gene families. The course is lecture combined with supplemental readings.

HGG640 Family Studies and Genetic Analysis  
2 credits  
Spring Semester

HGG650 Advanced Topics in Molecular Genetics  
3 credits  
Spring Semester  
Topics include human microRNAs, the neurobiology of aging, structural variation, modern genome technology, among others. The course structure consists of discussions and analysis of primary literature.  
PREREQUISITE: HGG 630 OR PERMISSION FROM INSTRUCTOR

HGG660 Topics in Bioinformatics  
1 credit  
Fall Semester  
This course will cover provide students with a basic introduction to standard bioinformatics methods and applications, with a particular focus on 2nd generation sequence data sets. The course will be taught in a laboratory setting, and students will be directly working with software applications during class time. Topics covered will include genomic annotation resources, fundamentals of sequence alignment and assembly, detection of genomic variation, RNA expression analysis, ChIP-Seq data analysis, and functional genomic element prediction. The course is lecture-based, but will include readings from the text and primary literature. There will be homework assignments, one midterm exam, and one final exam. Details on the assignments will be posted to BlackBoard.

HGG661 Advanced Topics in Bioinformatics  
1 credit  
Spring Semester  
PREREQUISITE: HGG 660

HGG680 Genome Ethics and Public Policy  
3 credits  
Fall & Spring Semester
HGG681 Human Genetics Clinical Rotation  
1 credit  
Fall & Spring Semester

HGG689 Human Genetics and Genomics Teaching Practicum  
1 credit  
Fall & Spring Semester & First & Second Summer Session

HGG730 Doctoral Dissertation- Pre Candidacy.  
1-12 credits  
Fall & Spring Semester  
1 - 12 credit course for Doctoral candidates working on pre-candidacy dissertation.  
PREREQUISITE: NONE

HGG740 Doctoral Dissertation - Post Candidacy  
1-12 credits  
Fall & Spring Semester & First & Second Summer Session  
1-12 credit course for Doctoral Candidates working on dissertation post candidacy.

HGG750 Research in Residence  
0 credit  
Fall & Spring Semester & First & Second Summer Session

INTERDISCIPLINARY BIOMEDICAL STUDIES

IBS602 Interdisciplinary Biomedical Studies II  
4 credits  
Spring Semester  
A continuation of IBS 602. Topics include cell organization, membrane structure, signal transduction, transport across cell membranes, protein sorting, nerve signaling, microfilaments and microtubules, cell-cell and cell-matrix interactions, cell cycle, cancer, and immunity.  
PREREQUISITE: PERMISSION OF THE INSTRUCTOR

IBS603 Interdisciplinary Biomedical Studies II  
1-4 credits  
Fall Semester  
PREREQUISITE: IBS 601 OR PERMISSION OF THE INSTRUCTOR

IBS611 Accelerated Basic Science Medical Curriculum  
1-18 credits  
Fall & Spring Semester  
The following accelerated and intensive basic science medical curriculum is offered: Biochemistry, Genetics and Cell Biology, Medical Microbiology and Immunobiology, Gross Anatomy, Histology and Pathology, Physiology and Pharmacology, Neuroscience and Behavioral Science, and the Cardiovascular System. A single grade will be entered on the graduate transcript for this course.  
PREREQUISITE: ADMISSION TO THE COMBINED M.D./PH.D. PROGRAM

IBS612 Accelerated Basic Science Medical Curriculum II  
1-18 credits  
Fall & Spring Semester & First & Second Summer Session  
Beginning in the latter part of June each year, extending to the middle of May of the ensuing year, the following accelerated and intensive medical curriculum is offered: Respiratory System, Renal System, Dermatology and Ophthalmology, Gastrointestinal System and Human Nutrition, Human Anatomy, Problem based learning/Rheumatology, Hematology and Oncology. A single grade will be entered on the graduate transcript for this course.  
PREREQUISITE: ADMISSION TO THE COMBINED M.D./PH.D. PROGRAM.
IBS620 Scientific Writing I
2 credits Fall & Spring Semester
This course will help students to strengthen their scientific writing skills. We will review the standards and expectations of scientific discourse, focusing on the scientific paper as a refined tool for conveying research findings in a clear, objective fashion and positioning the author/s within a specific research community. Sequenced writing assignments will address the functions and conventions of the various forms of scientific communication, from short correspondences to full research reports to review articles. The proper use and presentation of graphs and illustrations will also be covered.

IBS631 Laboratory Research
1-6 credits Fall & Spring Semester & First & Second Summer Session
Laboratory rotations to gain experience with a variety of modern techniques in molecular and cellular biology.
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

IBS680 Research Ethics
0 credit Fall Semester
0 Credits. The NIH Guide for Grants and Contracts stipulates that Institutions receiving support for National Research Service Award Training Grants are required to develop a program in the principles of Scientific Integrity. This program should be an integral part of the proposed training effort. The University of Miami School of Medicine has chosen to respond to this requirement with this course. This course must be taken during the first semester in the department or program. This is a six-hour course and will be given in two sessions of three hours each.
PREREQUISITE: PERMISSION OF ADVISOR.

IBS683 Professional Skills and Ethics I
1-3 credits Fall & Spring Semester & First & Second Summer Session
Two-day intensive workshop involves a combination of lectures, discussions, readings and writing to enhance the professional development of beginning graduate students. Topics include strategies for selecting mentors, professional writing, giving oral presentations and research ethics.

IBS684 Professional Skills and Ethics II
1-3 credits Fall & Spring Semester & First & Second Summer Session
Two-day intensive workshop involves a combination of lectures, discussions, readings and writing exercises, and practical experiences to enhance the professional development of advanced graduate students, postdoctoral fellows and junior faculty. Topics include career choices, job search strategies and skills, fellowship/grant applications and research ethics.

IBS700 Practical Training & Internship
1-3 credits Fall Semester

MICROBIOLOGY & IMMUNOLOGY

MIC501 Medical Microbiology
5 credits Offered By Announcement Only
Course discusses the nature of microbial agents of infectious disease as well as relationship of virulence to host resistance and fundamental immunologic concepts. Microbial physiology and genetics, the structure, design, and mechanism of action on antimicrobials are also.
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.
MIC523 Mechanisms of Microbial Virulence
2 credits       Spring Semester
This course will focus on the mechanisms employed by bacterial and viral pathogens to produce disease in animals and humans. The course is divided into two 3 week modules. The first module will cover bacterial pathogens with an emphasis on the bacteria-host cell interaction. Specific topics will include: bacterial attachment and invasion of eukaryotic cells, virulence gene regulation, and secretion of virulence factors, bacterial toxins and obligate intracellular bacterial pathogens. The second module will cover viruses and human viral diseases with an emphasis on viral replication, gene expression, virus-host cell interactions and viral oncology. Classes will consist of a mixture of lectures and discussions of recent or classic papers. There will be 2 exams.

MIC605 Faculty Research and Discussions
1 credit       Fall Semester
Forum for the discussion of the current research projects and interests of the faculty. This course provides students with the opportunity to exchange ideas about important scientific questions and the technologies being applied to experimentally address the hypotheses being tested.

MIC611 Accelerated Basic Science Medical Curriculum
1-18 credits    Fall & Spring Semester
Beginning in the latter part of June each year, extending to the middle of February of the ensuing year, the following accelerated and intensive complete basic science medical curriculum is offered: Embryology, Gross Anatomy, Histology, Biochemistry, Neuroanatomy, Biophysics and Neurophysiology, Systemic Physiology, Pathology, Medical Microbiology, and Pharmacology. single grade will be entered on the graduate transcript for this course.
PREREQUISITE: ADMISSION TO THE COMBINED M.D./PH.D. PROGRAM.

MIC616 Advanced Molecular Biology
3 credits       Fall Semester
The molecular basis of cellular function and regulation in both procaryotic and eucaaryotic systems. The molecular genetics and biochemistry of the genetic material and its utilization during replication, transcription, translation, cellular growth, division, and differentiation. Recombinant DNA technology and molecular genetics are discussed. This course is designed for graduate students in biological sciences. A good background in biology or biochemistry is recommended.

MIC626 Laboratory Experimentation
4 credits       Fall Semester
One or two laboratory training sessions of 6-12 weeks each. Each student rotates through faculty research laboratories in the areas of immunology, molecular biology, and microbiology, (bacteriology, virology, parasitology) where they receive "hands on" experience by participating in ongoing research projects.
PREREQUISITE: MIC 501 AND PERMISSION OF CHAIRMAN OF GRADUATE STUDIES COMMITTEE.

MIC627 Laboratory Experimentation
6 credits       Spring Semester
Two or three laboratory training sessions of 6-12 weeks each. Each student rotates through faculty research laboratories in the areas of immunology, molecular biology and microbiology, (bacteriology, virology, parasitology) where they receive "hands on" experience by participating in ongoing research projects.
PREREQUISITE: MIC 501 AND PERMISSION OF CHAIRMAN OF GRADUATE STUDIES COMMITTEE.
MIC628 Principles of Immunology
3 credits
Spring Semester
This team-taught course will present immunological concepts and reasoning in immunological research. The course is divided into 7 weekly modules. Each module has a common theme and consists of 3 lectures on immunological concepts and one session where students present and discuss a research paper related to the theme of each module. The paper discussion session will include use of disease models as a portal to understand the function of immune system in health and disease. The module topics are (a) lymphoid cell development, (b) antigen recognition, (3) initiation of immune responses, (4) T lymphocyte effector development and function, (5) T cell immunity versus tolerance, (6) B cell immunity, and (7) innate immunity. There will be one exam following the first 4 modules and the second exam after the remaining 3 modules.

MIC631 Special Work
1-5 credits
Fall Semester
Special work, lecture, laboratory or a combination of these, as determined by advisor in accord with student's individual interest. Course is offered only on demand.
PREREQUISITE: PERMISSION OF ADVISOR AND DEPARTMENT CHAIRMAN.

MIC651 Advanced Molecular Immunology
3 credits
Fall Semester
The molecular mechanisms for generation of antigen specific receptor diversity and the specific gene activation during lymphocyte differentiation.
PREREQUISITE: MIC 628.

MIC655 Infectious Agents and the Immune System
3 credits
Spring Semester
This course is intended to explore, at an advanced level, the dynamic equilibrium that exists between microbial pathogens and host immune systems with emphasis on factors that influence progression to disease or sterilizing immunity. Mechanisms employed by the host and pathogen to shift that equilibrium in their favor will be discussed taking into account interactions at the cell system, cellular, and sub-cellular levels. To facilitate interaction between the two fields, both an immunological and a microbial/viral faculty member will be present at all classes.
PREREQUISITE: MIC 523 OR PERMISSION OF INSTRUCTOR.

MIC661 Advanced Topics in Molecular Biology of Animal Viruses
2 credits
Offered By Announcement Only
This course is organized around four major themes of virological studies: (i) viral genome transcription, replication, and virus assembly; (ii) viral pathogenesis; (iii) virus cell interactions; and (iv) antiviral strategies. Most recent research developments in these areas are covered through lectures by participating faculty members as well as paper presentations by students.
PREREQUISITE: MIC 523 OR PERMISSION ON INSTRUCTOR.

MIC675 Advanced Microbiology and Immunology
3 credits
Fall Semester
This course will explore in depth the current and advanced concepts and topics in selected areas of Microbiology and Immunology. The classes will consist of a mixture of lectures and discussions of recent papers. Besides covering recent advances and cutting edge experimental approaches in cellular and molecular immunology and microbiology, this course will also expose students to breakthrough concepts and themes that link the disciplines of immunology, microbiology and virology.
PREREQUISITE: MIC 628 OR MIC 523
MIC680 Research Ethics  
0 credit  
Fall Semester  
The NIH Guide for Grants and Contracts stipulates that Institutions receiving support for National Research Service Award Training Grants are required to develop a program in the principles of Scientific Integrity. This program should be an integral part of the proposed training effort. The University of Miami School of Medicine has chosen to respond to this requirement with this course. This course must be taken during the first semester in the Department or Program. This is a six-hour course and is given in two sessions of three hours each.  
PREREQUISITE: PERMISSION OF THE GRADUATE ADVISOR.

MIC699 Advanced Topics  
1-3 credits  
Offered By Announcement Only  
Subject matter offerings based upon student demand and availability of faculty. Subtitles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title "Advanced Topics".  
PREREQUISITE: PERMISSION FROM INSTRUCTOR.

MIC710 Master's Thesis  
1-6 credits  
Offered By Announcement Only  
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

MIC720 Research in Residence  
0 credit  
Offered By Announcement Only  
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in MIC 710 (usually six credits). Credit not granted. May be regarded as full-time residence.

MIC730 Doctoral Dissertation  
1-12 credits  
Fall & Spring Semester & First & Second Summer Session  
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor but not for less than a total of 24. Not more than 12 hours of MIC 730 may be taken in a regular semester, nor more than six in a summer session. Where a student has passed his/her (a) qualifying examinations, and (b) is engaged in an assistantship, he/she may still take the maximum allowable credit stated above.

MIC740 Doctoral Dissertation - Post Candidacy  
1-12 credits  
Fall Semester  

MIC750 Research in Residence  
0 credit  
Fall & Spring Semester & First & Second Summer Session  
Used to establish research in residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

MOLECULAR CELL & DEVELOPMENTAL BIOLOGY  
MDB601 Seminar  
1-2 credits  
Fall & Spring Semester & First & Second Summer Session  
For graduate students in Cell Biology and Anatomy, Graduate Program in Molecular Cell and Developmental Biology. Departmental Faculty and graduate student research seminars.  
PREREQUISITE: PERMISSION OF DEPARTMENT CHAIRMAN.
MDB606 Computer Applications in Research
2 credits Offered By Announcement Only
Microcomputer programs beneficial to a wide variety of biomedical research applications.
PREREQUISITE: PERMISSION OF INSTRUCTOR AND DEPARTMENT CHAIRMAN.

MDB610 Readings in Cell Biology
1-6 credits Fall & Spring Semester
Current and classical research papers in cell, developmental, and molecular biology. Critical evaluation of papers and the methodologies used is included.
PREREQUISITE: PERMISSION OF COURSE SUPERVISOR AND DEPARTMENT CHAIRMAN.

MDB613 Topics in Cell Biology
1-6 credits Fall & Spring Semester & First & Second Summer Session
Formal seminar course in which each student presents a lecture relating to a specific theme. Topic areas include cell, developmental, and molecular biology with the subject changing each term.
PREREQUISITE: PERMISSION OF COURSE SUPERVISOR AND DEPARTMENT CHAIRMAN.

MDB617 Advanced Techniques in Molecular Biology
2-3 credits Fall Semester
Method/techniques type course.
PREREQUISITE: BMB 506 OR EQUIVALENT, OR PERMISSION OF INSTRUCTOR.

MDB618 Cell Membranes
2 credits Offered By Announcement Only
Cell membrane structure and function including recent developments in intracellular targeting of membrane vesicles, mechanisms of exocytosis, receptor-mediated endocytosis, and regulation of intercellular recognition by cell surface molecules.
PREREQUISITE: PERMISSION OF INSTRUCTOR AND DEPARTMENT CHAIRMAN.

MDB620 Introduction to Research in Cell Biology
1-6 credits Fall & Spring Semester
Direct laboratory experience as determined by the Departmental Graduate Committee.
PREREQUISITE: PERMISSION OF COORDINATOR AND DEPARTMENT CHAIRMAN.

MDB645 Research Problems in Biochemistry, Cell and Molecular Biology
2-3 credits Fall & Spring Semester & First & Second Summer Session
Laboratory research problems in various areas of biochemistry, cell biology, and molecular biology. A literature search, experimental design, data gathering, and evaluation of results is included. Course is the mechanism by which graduate laboratory rotations are done in preparation for selection of Ph.D. mentor.
PREREQUISITE: BMB 506 OR EQUIVALENT OR PERMISSION OF INSTRUCTOR.

MDB651 Advanced Molecular Cell Biology
3 credits Spring Semester
Structure, function, biogenesis of cellular organelles, and the cytoskeleton including its regulation and dynamic interactions are discussed.
PREREQUISITE: BIL 255 AND BMB 401 OR 506 AND PERMISSION OF DEPARTMENT CHAIRMAN.
MDB652 Current Topics in Mammalian Development
2-3 credits    Fall Semester
The course will cover central emerging topics in mammalian development today including embryonic stem cells, micro RNA gene regulation, and organogenesis. The class will have an interactive format, starting with basic lecture in mammalian development; subsequent sessions will include an overview of the selected topic by faculty, followed by round table discussions of current paper(s) in the field.
PREREQUISITE: SUCCESSFUL COMPLETION OF MDB 651 AND PERMISSION OF DEPARTMENT CHAIRMAN.

MDB653 Histology
1 credit    Fall Semester
This course will offer the student a virtual slide collection of histology with interactive lectures to support image-based learning. The course covers basic tissues, organs, and systems (vascular; heart; pancreas; eyes; brain; spinal cord; liver; lung; mouse embryo; GI track). The course will meet once a week for one hour.
PREREQUISITE: 2ND. YEAR GRADUATE STUDENT, IBS

MDB654 Methods in Cell Biology
2 credits    Offered By Announcement Only
Introduction to the basic biochemical and cytochemical laboratory techniques used in cell biological and biomedical research.
PREREQUISITE: BASIC BIOLOGY AND CHEMISTRY AND PERMISSION OF INSTRUCTOR AND DEPARTMENT CHAIRMAN.

MDB663 Development and Regeneration of the Nervous System
3 credits    Fall Semester
Development of the nervous system in all its aspects: origins of neurons and glia; nerve cell differentiation; cellular interactions during neurogenesis; formation of synaptic connections and neuronal circuits; development of nervous functions and ontogeny of behavior; mechanisms of repair and reorganization in the nervous systems; and theories of neuronal plasticity.
PREREQUISITE: PERMISSION OF COURSE COORDINATOR AND DEPARTMENT CHAIRMAN.

MDB665 Tumor Biology
2-3 credits    Fall Semester
Tumor Biology is intended to provide an overview and update of the most important topics in modern molecular and cellular aspects of cancer biology and research. The sessions are topical and include both lectures and discussions of current papers in the topic areas. A list of the topics is attached.
PREREQUISITE: NONE. REGISTRATION IS OPEN TO ANYONE ENROLLED IN A UM GRADUATE PROGRAM OR BY PERMISSION OF THE INSTRUCTORS.
MDB666 Advanced Microscopy and Image Analysis
2 credits
Fall Semester
This course will cover the acquisition, use and maintenance of advanced research microscopes including data analysis using the equipment and software already available in the instructors' labs. Topics to be covered include types, function and choice of optical and electron microscopes; sample preparation and synthesis of fluorescent and particle-labeled probes; transmitted light microscopy; fluorescent microscopy; confocal microscopy; real time cell and particle tracking; digital image analysis and quantitative fluorescence analysis; transmission and scanning electron microscopy, and digital image data interpretation. The course will meet twice a week for one hour, with one lecture and one hands-on laboratory session per week. Class registration is limited to 4-6 students.
PREREQUISITE: IBS 601 AND 601, AND SOME LABORATORY EXPERIENCE IN CELL BIOLOGY AND BASIC MICROSCOPY. ADMISSION IS WITH PERMISSION OF THE INSTRUCTORS.

MDB680 Research Ethics
0 credit
Fall Semester
The NIH Guide for Grants and Contracts stipulates that Institutions receiving support for National Research Service Award Training Grants are required to develop a program in the principles of Scientific Integrity. This program should be an integral part of the proposed training effort. The University of Miami School of Medicine has chosen to respond to this requirement with this course. This course must be taken during the first semester in the Department or Program. This is a six-hour course and will be given in two sessions of three hours each.
PREREQUISITE: PERMISSION OF THE GRADUATE ADVISOR.

MDB710 Master's Thesis
1-6 credits
Offered By Announcement Only
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

MDB720 Research in Residence
0 credit
Offered By Announcement Only
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in MDB 710 (usually six credits). Credit not granted. May be regarded as full time residence.

MDB730 Doctoral Dissertation
1-12 credits
Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor but not for less than a total of 24. Not more than 12 hours of MDB 730 may be taken in a regular semester, nor more than six in a summer session. Where a student has passed his/her (a) qualifying examinations, and (b) is engaged in an assistantship, he/she may still take the maximum allowable credit stated above.

MDB740 Doctoral Dissertation- Post Candidacy
1-12 credits
Fall & Spring Semester & First & Second Summer Session
MOLECULAR CELL & DEVELOPMENTAL BIOLOGY

MDB750 Research in Residence
0 credit  Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D., after the student has been
enrolled for the permissible cumulative total in appropriate doctoral research.
Credit not granted. May be regarded as full-time residence as has determined by
the Dean of the Graduate School.

MOLECULAR & CELLULAR PHARMACOLOGY

MCP601 Seminar
1 credit  Fall & Spring Semester
Review of the literature and discussion of specific topics. Course may be repeated
for a total of four credits.
PREREQUISITE: CONSENT OF INSTRUCTOR.

MCP604 Mechanisms of Drug Action
2 credits  Fall Semester
Mechanisms underlying the therapeutical and pharmacodynamic properties of pharmacological
agents. Emphasis is placed on cellular and molecular aspects and the quantitative
factors governing equilibration within multicompartment systems and drug control
of nervous and muscular function in relation to therapeutic action.
PREREQUISITE: CONSENT OF INSTRUCTOR.

MCP605 Eukaloryotic Model Systems of Human Disease and Drug Development
3 credits  Spring Semester
This course provides the students with a comprehensive overview of the eukaryotic
model systems used in biomedical research with a specific focus on human disease
and drug design. The lecture sessions discuss in detail the advantages of yeast,
C. elegans, Drosophila, Xenopus oocytes, zebra fish, chick and mice, the unique
biological processes that each of these models are able to tackle, and their technical
application. The problem solving sessions discuss specific examples where each
of the models is utilized to address a biological question and/or a specific drug
development.
PREREQUISITE: N/A

MCP607 Toxicology, Its Principles and Environmental Application
2 credits  Offered By Announcement Only
The principles of toxicology, toxicity, and carcinogenic testing procedures, and
their interpretation. Relevance to man is stressed. Application of these principles
to environmental problems with the heavy metals, pesticides, poisonous plants,
animal toxins, environmental carcinogens, radioisotopes, the abuse of drugs, alcohol,
and mycotoxins is covered in detail.
PREREQUISITE: CONSENT OF INSTRUCTOR.

MCP608 Drug Metabolism
2 credits  Offered By Announcement Only
Factors affecting the absorption, metabolic rate, excretion of drugs, chemicals,
and toxic substances.
PREREQUISITE: CONSENT OF INSTRUCTOR.

MCP610 Membrane Biophysics Seminar
1 credit  Offered By Announcement Only
The student may be required to submit a term paper.
PREREQUISITE: PERMISSION OF DEPARTMENTAL GRADUATE STUDIES COMMITTEE.
MCP611 Accelerated Basic Science Medical Curriculum
1-18 credits  Fall & Spring Semester
Beginning in the latter part of June each year, extending to the middle of February of the ensuing year, the following accelerated and intensive complete basic science medical curriculum is offered: Embryology, Gross Anatomy, Histology, Biochemistry, Neuroanatomy, Biophysics and Neuropsychology, Systemic Physiology, Pathology, Medical Microbiology, and Pharmacology. A single grade will be entered on the graduate transcript for this course.
PREREQUISITE: ADMISSION TO THE COMBINED M.D./PH.D. PROGRAM

MCP612 Pathobiology I
3 credits  Offered By Announcement Only
Required for Physician Scientist Program students; open to graduate students. Two, three-hour sessions (first hour at multi-headed scope followed by two hours of laboratory) per week for eight weeks in the fall semester (September and October; days and times to be arranged). The purpose of the pathobiology course is to provide graduate students with knowledge of basic principles for understanding normal histomorphology and pathologic lesions associated with experimentally induced and naturally occurring diseases. The keystone of this innovative, short course is the small group's Socratic study of a series of autopsy cases--each represented by a set of microscopic slides. The cases are preselected to allow the students to focus on specific, basic concepts early and organ-system lesions later. Students spend the first hour of the biweekly sessions at a multi-headed scope creating a profile of the patient--including age, sex, race, and chief disease. At the end of the first hour deliberations, students receive feedback regarding their conclusions by being provided with a summary of the patient's history and autopsy findings. Students review relevant gross specimens and kodachromes during the biweekly two-hour laboratory sessions.
PREREQUISITE: ADMISSION TO THE PHYSICIAN SCIENTIST PROGRAM OR THE GRADUATE PROGRAM OF ONE THE FIVE BASIC SCIENCE DEPARTMENTS LOCATED AT THE SCHOOL OF MEDICINE.

MCP620 Design and Evaluation of Drug Studies
1 credit  Offered By Announcement Only
Practical experience in the design and evaluation of drug studies making use of data from actual field trials conducted in the clinical facilities of the department. Drug evaluation studies in the literature are examined.
PREREQUISITE: MCP 604, 605 AND PERMISSION OF DEPARTMENTAL GRADUATE STUDIES COMMITTEE.

MCP621 Clinical Pharmacology
2 credits  Offered By Announcement Only
The application of pharmacologic principles of clinical situations. Basic concepts such as drug uptake, distribution, and mechanics of action, metabolism, and elimination are discussed as they apply to proper therapeutic use of drugs. Clinical cardiovascular pharmacology is covered in particular depth.
PREREQUISITE: MCP 604, 605 AND PERMISSION OF DEPARTMENTAL GRADUATE STUDIES COMMITTEE.

MCP624 Research Opportunities in Human Disease
1 credit  Offered By Announcement Only
The course presents human diseases from a research perspective, with each disease forming the basis for four lecture/discussion sections (2 hrs/session; 1 session/wk.). Each disease is discussed with respect to: 1) Clinical presentation, epidemiology, and therapeutics, 2) Cellular and Molecular mechanisms, 3) Current treatment strategies, and 4) Prospects, challenges, and opportunities for research efforts.
MCP631 Special Topics  
1-6 credits  Spring Semester  
Directed readings on subjects not ordinarily treated in depth in specific courses. Course may also consist of special laboratory problems.

MCP632 Cardiovascular Pharmacology  
2-3 credits  Spring Semester  
A course for advanced students covering the mechanism of action of drugs on the cardiovascular system.  
PREREQUISITE: CONSENT OF INSTRUCTOR.

MCP635 Biophysical Chemistry  
2 credits  Offered By Announcement Only  
This course teaches the physico-chemical principles basic to life science and complements MCP 641, "Principles in Membrane Physiology and Biophysics". The course is designed so that a student lacking previous exposure to physical chemistry can take the two courses concurrently. Topics include equilibrium and thermodynamics, mathematical descriptions of multiple equilibrium, electrolyte theory, rate theory, mathematical descriptions of the rates of enzymatic reactions, diffusion and permeation, mechanistic aspects of ion transport, and the application of fluorescent probe methods to the study of membrane phenomena. The courses uses a problem-solving approach.  
PREREQUISITE: CONSENT OF INSTRUCTOR.

MCP641 Principles of Membrane Physiology and Biophysics I  
2 credits  Offered By Announcement Only  
Course emphasizes chemical and physical structure of membranes, model systems, permeability and transport, membrane potential, ionic channels, excitability in nerve and muscle, ionophores, active transport, and membrane receptors. Identical to Physiology and Biophysics 641.  
PREREQUISITE: CHM 365; BMB 506; AND PERMISSION OF DEPARTMENTAL GRADUATE STUDIES COMMITTEE.

MCP642 Principles of Membrane Physiology and Biophysics II  
2 credits  Offered By Announcement Only  
Course discusses osmosis and cell volume, tracer analysis of permeability and compartmentation, theory of channels and carriers, and cable properties. The Hodgkin-Huxley formalism; Na, K, and Ca ion channels; regulation of cellular Na and Ca activities; single-channel analysis; chemical synapses; membrane receptors; cell junctions; excitation; and E-C coupling in muscle are also covered. Identical with Physiology and Biophysics 642.  
PREREQUISITE: MCP 641.

MCP643 Methods in Membrane Research  
3 credits  Fall Semester  
Introduction to research and laboratory techniques. Molecular and membrane pharmacology, radio-tracers, cardiovascular, and neuropharmacology are covered.  
PREREQUISITE: PERMISSION OF DEPARTMENTAL GRADUATE STUDIES COMMITTEE.

MCP644 Methods in Membrane Research  
3 credits  Spring Semester  
Introduction to research and laboratory techniques. Molecular and membrane pharmacology, radio-tracers, cardiovascular, and neuropharmacology are covered.  
PREREQUISITE: PERMISSION OF DEPARTMENTAL GRADUATE STUDIES COMMITTEE.
MCP645 Topics in Membrane Physiology and Biophysics
3 credits Offered By Announcement Only
In-depth examination of selected topics introduced in MCP 641, 642. A term paper is required.
PREREQUISITE: MCP 641, AND PERMISSION OF DEPARTMENTAL GRADUATE STUDIES COMMITTEE.

MCP651 Cell Biology I
2 credits Offered By Announcement Only
The dynamics of eukaryotic cells examined from the standpoint of structure and function, regulation of function and interactions of the subcellular organelles.
Identical to PHS 651.

MCP652 Cell Signaling I: Intracellular Signal Transduction.
3 credits Fall Semester
Most therapeutic drugs exert their action by influencing cellular signal transduction processes. This course provides an in-depth molecular level review of the fundamental signal transduction mechanisms that regulate cell growth, cell proliferation, checkpoint response to cell stressors, cell morphogenesis and differentiation, and their role in the onset of disease.
PREREQUISITE: CONSENT OF INSTRUCTOR.

MCP653 Cell Signaling 2: Cell-to-Cell Communication and Development.
3 credits Spring Semester
This course focuses on receptors and signaling pathways that govern cellular responses to extrinsic signals. It concentrates on specifics of signaling events in selected biological systems such as CNS, endocrine system, cardiac and hematopoietic stem cells.
PREREQUISITE: CONSENT FROM INSTRUCTOR

MCP668 Neuropharmacology
2- 3 credits Fall Semester
A course for advanced students covering the mechanism of action of drugs on neural processes, including action potentials, neurotransmission (storage, release, reception, and metabolism of transmitters), and central nervous system activity.
PREREQUISITE: CONSENT OF INSTRUCTOR

MCP680 Research Ethics
0 credit Fall Semester
The NIH Guide for Grants and Contracts stipulates that Institutions receiving support for National Research Service Award Training Grants are required to develop a program in the principles of Scientific Integrity. This program should be an integral part of the proposed training effort. The University of Miami School of Medicine has chosen to respond to this requirement with this course. This course must be taken during the first semester in the Department or Program. This is a six-hour course and will be given in two sessions of three hours each.
PREREQUISITE: PERMISSION OF THE GRADUATE ADVISOR.

MCP710 Master’s Thesis
1- 6 credits Fall & Spring Semester & First & Second Summer Session
The student working on his/her master’s thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.
MCP720 Research in Residence
0 credit  Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in MCP 710 (usually six credits). Credit not granted. May be regarded as full-time residence.

MCP730 Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor but not for less than a total of 24. Not more than 12 hours of MCP 730 may be taken in a regular semester, nor more than six in a summer session. Where a student has passed his/her (a) qualifying examinations, and (b) is engaged in an assistantship, he/she may still take the maximum allowable credit stated above.

MCP740 Doctoral Dissertation- Post Candidacy
1-12 credits  Fall & Spring Semester & First & Second Summer Session

MCP750 Research in Residence
0 credit  Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

NEUROSCIENCE

NEU600 Seminar in Neuroscience
1 credit  Fall & Spring Semester
Students are required to present a short talk on a research area of interest. All students in the Neuroscience Program are required to register for this seminar, which also includes journal presentations. For other registrants, permission of the Departmental Graduate Studies Committee is required.

NEU601 Introduction to Neuroscience Techniques
1 credit  Fall & Spring Semester
Hands-on exercises in research laboratories introduce first-year Neuroscience students to methodologies commonly used in the Neurosciences. The course includes selected techniques from electrophysiology, immunocytochemistry, fluorescence microscopy, recombinant DNA, protein immunoblotting, and functional imaging. Students are required to complete a lab notebook of each exercise. There is also a segment on database searches.

NEU609 Research
1-5 credits  Fall & Spring Semester & First & Second Summer Session
Students work with individual members of the program faculty on research problems. Provides orientation as to the areas of research in the field and the techniques used.
PREREQUISITE: PERMISSION OF THE PROGRAM STEERING COMMITTEE OR ITS CHAIRMAN.
NEU611 Accelerated Basic Science Medical Curriculum
1-18 credits    Fall & Spring Semester
From late June to mid-February, the following accelerated and intensive complete basic science medical curriculum is offered: Embryology, Gross Anatomy, Histology, Biochemistry, Neuroanatomy, Biophysics and Neurophysiology, Systemic Physiology, Pathology, Medical Microbiology, and Pharmacology. A single grade will be entered on the graduate transcript for this course.
PREREQUISITE: ADMISSION TO THE M.D./PH.D. DEGREE PROGRAM

NEU631 Advanced Topics in Neuroscience
1-5 credits  Fall & Spring Semester & First & Second Summer Session
Special work, lecture, laboratory, reading, seminar, or a combination of these as determined by advisor in accordance with student's interest.
PREREQUISITE: PERMISSION OF THE PROGRAM STEERING COMMITTEE.

NEU641 Statistics in Neuroscience
1 credit                                               Offered By Announcement Only
This course will provide basic information necessary to appropriately design experiments and analyze and interpret data in the behavioral and biological sciences. A lecture/discussion format will be used. The course will cover research methodology, basic statistical concepts, and an in-depth discussion of descriptive (measures of central tendency, variability and correlation) and inferential statistics (both parametric and non-parametric tests of significance). In addition, various statistical computer programs will be reviewed. Specific topics include: 1. Statistical terminology; 2. Measurement scales; 3. Plotting your data for initial interpretation; 4. Measures of central tendency and variability; 5. Type I and Type II errors and controlling power; 6. Which statistical test do I use for my data? 7. What can I conclude from my data and does it mean anything? Students will be evaluated based on their understanding of statistical design and data interpretation.

NEU650 Modeling CNS injury and Repair
1 credit                                                     Fall & Spring Semester
This course provides an overview of a number of complex modeling systems using in CNS injury and Repair biomedical research. The course examines models, such as spinal cord injury, traumatic brain injury, ischemic/stroke injury, experimental autoimmune encephalomyelitis (EAE) model of multiple sclerosis, axon regeneration in retinal nerve and spinal cord, and drosophila models of degeneration. The course will consist of both lectures and hands-on laboratory components.
PREREQUISITE: NEU 697

NEU661 Neuroscience I
2 credits                                                           Spring Semester
An introduction to neuronal physiology, including synaptic transmission and integration, sensory neurobiology, and cellular learning and memory. 2 credits.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

NEU662 Neuroscience II--Neural Systems
4 credits                                                 Fall Semester
This course is designed to teach Neuroscience to individuals engaged in basic neuroscience research. The course provides comprehensive coverage of Neuroscience. Neuroscience II covers Network Neurobiology and Higher Nervous System Function. The course concentrates on the experimental basis for our understanding of nervous system function. Course utilizes both didactic lectures and discussions of current research literature.
PREREQUISITE: PHS 641, PHS 642, NEU 661 OR CONSENT OF INSTRUCTOR
**NEU663 Developmental Neuroscience.**  
*2 credits  Spring Semester*  
This course will explore nervous system development from early neural induction and neurogenesis to the construction of neural circuits. Cellular and molecular mechanisms of neural migration, neurite growth and guidance, and synaptogenesis will be covered.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.

**NEU680 Research Ethics**  
*0 credit  Fall Semester*  
The NIH Guide for Grants and Contracts stipulates that Institutions receiving support for National Research Service Award Training Grants are required to develop a program in the principles of Scientific Integrity. This program should be an integral part of the proposed training effort. The University of Miami School of Medicine has chosen to respond to this requirement with this course. This course must be taken during the first semester in the Program. This is a six-hour course and will be given in two sessions of three hours each.  
PREREQUISITE: PERMISSION OF THE GRADUATE ADVISOR OR PROGRAM DIRECTOR.

**NEU697 Neuroanatomy**  
*3 credits  Fall Semester*  
This course is designed to teach functional neuroanatomy to individuals engaged in basic neuroscience research. Therefore, most of the emphasis will be placed upon gross anatomy, identification of pathways and circuits, and a description of the physiological functions of neuroanatomical systems. To the extent that it may help to explain functional aspects of the nervous system, each lecture will contain some clinical examples and/or case histories. An important feature of each class period will be a laboratory segment in which the student will study human and sheep brains, examine models of the brain, and use internet neuroanatomy websites containing pictures, text, clinical examples, and 3-dimensional rotations of the nervous system.  
PREREQUISITE: UNDERGRADUATES REQUIRE PERMISSION OF INSTRUCTOR.

**NEU710 Master's Thesis**  
*1-12 credits  Offered By Announcement Only*

**NEU720 Research in Residence**  
*0 credit  Fall & Spring Semester & First & Second Summer Session*  
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in Master's Thesis (usually six credits). Credit not granted. May be regarded as full time residence.

**NEU730 Doctoral Dissertation**  
*1-12 credits  Offered By Announcement Only*  
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor but not for less than a total of 24. Not more than 12 hours of NEU 730 may be taken in regular semester, nor more than six in a summer session. Where a student has passed his/her (a) qualifying examinations, and (b) is engaged in an assistantship, he/she may still take the maximum allowable credit stated above.

**NEU740 Doctoral Dissertation- Post Candidacy**  
*1-12 credits  Fall Semester*  
PREREQUISITE: NONE
NEU750 Research in Residence

0 credit  Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research.
Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

PHYSICAL THERAPY

PTS505 Physical Therapy Private Practice Management

1 credit  Fall Semester
Course focuses on establishing a private physical therapy practice, including initial development through marketing and management.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY OR WITH PERMISSION OF THE INSTRUCTOR.

PTS506 Issues in Women's Health: Gynecology

1 credit  First & Second Summer Session
Introduction to physical therapy practice for evaluation and treatment of pelvic floor dysfunction.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY OR WITH PERMISSION OF THE INSTRUCTOR.

PTS507 Issues in Women's Health: Obstetrics, Osteoporosis and Breast Health

1 credit  Fall Semester
Introduction to physical therapy practice for evaluation and treatment of problems related to pregnancy, osteoporosis, and other disorders specific to women.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY OR WITH PERMISSION OF THE INSTRUCTOR.

PTS508 Rape Aggression Defense for Women (RAD)

1 credit  Fall Semester
A comprehensive self defense course for women including awareness, prevention, risk reduction and avoidance, and the basics of hands-on defense training.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY OR WITH PERMISSION OF THE INSTRUCTOR.

PTS509 Exercise for Persons with Spinal Cord Injuries

1 credit  First & Second Summer Session
Course provides a review of etiology and pathology of spinal cord injury as well as current methods of exercise and electrical stimulation systems and their physiological effects on the individual.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY OR WITH PERMISSION OF THE INSTRUCTOR.

PTS511 Advanced Clinical Practice: Topics in Pediatrics

1 credit  Fall Semester
The course will focus on advanced topics in pediatric physical therapy. Through lecture, seminar discuss and lab experiences, topics will include: typical and atypical development over the first year, and both motor and sensory integration examination and intervention strategies.
PREREQUISITE: PTS 614, PTS 630

PTS512 Sports Physical Therapy

1 credit  Spring Semester
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY OR WITH PERMISSION OF THE INSTRUCTOR.
PTS513 Advanced Clinical Practice: Evaluation and Treatment of the Foot and Ankle
1 credit  Offered By Announcement Only
Introduction to the roles and responsibilities of being a clinical instructor to physical therapy students. Course material is adapted from the Clinical Instructor Workshop of the Florida Consortium of Clinical Educators.
PREREQUISITE: FOR PHYSICAL THERAPY GRADUATE STUDENTS ONLY

PTS514 Certified Strength and Conditioning Specialist Preparation (NSCA)
1 credit  First Summer Session
Evaluation and exercise planning of athletes to help them achieve their maximum physical performance without incurring injury. Case studies, a problem-solving approach, and integration of previously learned material are emphasized. Classroom instruction, exercise performance, video analysis, and case studies.
PREREQUISITE: ENROLLMENT IN THE DPT PROGRAM

PTS515 Advance Clinical Practice: Taping for the Orthopedic Population.
1 credit  Fall Semester
This seminar course is designed to introduce the participant to the concepts of taping for various musculoskeletal pathologies commonly seen in the athletic population. Athletic taping and kinesiotaping principles and uses in rehabilitation will be introduced. A lab component will allow participants to practice the various taping techniques demonstrated.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY

PTS516 Clinical Research I
3 credits  Fall Semester
Principles, concepts, and basic skills required to conduct clinical research in physical therapy. Topics include research design, sampling, bias, reliability and validity, questionnaire design, statistical computing, conceptual review of literature, and the preparation of a research proposal.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY

PTS517 Abdominal Anatomy
1 credit  First & Second Summer Session
Course analyzes abdominal anatomy emphasizing structure and function. Cadaver dissection is included. Prerequisite: For Physical Therapy majors only or with permission of the instructor.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY OR WITH PERMISSION OF THE INSTRUCTOR

PTS519 Pelvic Anatomy
1 credit  First & Second Summer Session
Course analyzes the anatomy of the human pelvic area. Cadaver dissection is included.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY OR WITH PERMISSION OF THE INSTRUCTOR

PTS520 Spanish for Physical Therapists I
1 credit  First & Second Summer Session
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY OR WITH PERMISSION OF THE INSTRUCTOR
PTS522 Introduction to Functional Capacity Evaluations
1 credit     Spring Semester
The intent of this course is to introduce essential components of functional capacity
evaluations and establish entry-level proficiency. The emphasis will be on cardiovascular
clearance and testing, material handling testing, positional tolerance testing,
spinal inclinometry, and isometric reliability measures as identified through
evidence-based practice and current research.
PREREQUISITE: FOR PHYSICAL THERAPY GRADUATE STUDENTS ONLY

PTS523 Myofascial Release
1 credit     Fall Semester
Introduction to Myofascial Release technique in rehabilitation.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY, WITH PERMISSION OF INSTRUCTOR.

PTS524 Myofascial Release II.
1 credit     Spring Semester
A follow up to the introductory course MFR I (PTS 523). This course focuses on
a review of bioenergy followed by practice of myofascial release techniques for
trunk, extremities and head and neck. Cranial techniques and rebounding are also
taught.
PREREQUISITE: FOR PHYSICAL THERAPY GRADUATE STUDENTS ONLY.

PTS525 Introduction to dry needing theory and technique
1 credit     First Summer Session
Course analyzes the stages of development of the motor, cognitive, sensory/perception,
and behavioral systems from conception to old age. Prerequisite: Open to Physical
Therapy majors only; others with permission of instructor.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY. OTHERS WITH PERMISSION OF INSTRUCTOR.

PTS526 Introduction to Pilates Rehabilitation I
1 credit     Fall Semester
Course provides historical development, and evidence-based approach to Pilates
rehabilitation.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY; OTHERS WITH PERMISSION OF INSTRUCTOR.

PTS527 Introduction to Pilates Rehabilitation II
1 credit     Spring Semester
Introduction to the Pilates Environment.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY; OTHERS WITH PERMISSION OF INSTRUCTOR.

PTS528 Int Pilates Rehb III
1 credit     First & Second Summer Session

PTS530 Foundations of Physical Therapy
3 credits     Second Summer Session
Historical development, philosophical foundations and contemporary practice of
physical therapist as educator, consultant, administrator, and model of healthy
behaviors. Health as indicated by global fitness measures will be demonstrated
and experienced. Medical terminology mastered.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.
PTS531 Gross Anatomy for Physical Therapy
3 credits First Summer Session
Gross anatomy with emphasis on the musculoskeletal systems and a survey of other systems that are relevant to physical therapy practice.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS532 Gross Anatomy for Physical Therapy
3 credits Spring Semester
Gross Anatomy with emphasis on the musculoskeletal systems and a survey of other systems that are relevant to physical therapy practice.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS533 Communication in Physical Therapy Practice
2 credits First Summer Session
Course provides an analysis of communication skills in physical therapy clinical practice. Emphasis is placed on instruction of patients and their families, supportive staff, and health care team members. In-depth examination of patient-therapist interactions is included.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS540 Neuroscience I
3 credits Fall Semester
The human central nervous system with emphasis on structure-function relationships, and clinical applications. The brain, spinal cord, cranial nerves, tracts, and nuclei of major systems. Central nervous systems lesions and their clinical significance are discussed. Lecture and human dissection are included.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS541 Neuroscience II
3 credits First & Second Summer Session
The central, peripheral, and autonomic nervous systems and their physiological responses to environmental stimuli. Normal systems are contrasted with abnormal systems. The clinical significance of altered neurophysiological states is discussed.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS542 Electrotherapy
3 credits First & Second Summer Session
Course provides an evaluation of nerve and skeletal muscle by classical electrical means. The therapeutic application of selected modalities is discussed.
PREREQUISITE: PHYSICAL THERAPY MAJORS ONLY.

PTS543 Medical Pathology Seminar I
1 credit Fall Semester
Lectures and seminar discussion of pathological conditions with particular emphasis on musculoskeletal disorders.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS544 Medical Pathology Seminar II
1 credit Spring Semester
Lectures and seminar discussion of pathological conditions with particular emphasis on neuromuscular disorders.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.
PTS545 Medical Pathology Seminar III
1 credit  First & Second Summer Session
Lectures and seminar discussion of pathology conditions with particular emphasis on integumentary disorders.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS546 Medical Pathology Seminar IV
1 credit  Fall Semester
Lectures and seminar discussion of pathological conditions with particular emphasis on cardiorespiratory disorders.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS550 Pharmacology
2 credits  Fall Semester
Basic principles of pharmacology and pharmacotherapeutics. Contemporary drug therapies and their effects on patients undergoing rehabilitation are discussed.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS570 Clinical Skills in Physical Therapy
3 credits  Spring Semester
Decision making, documentation and beginning treatment skills in functional mobility and basic exercise and massage. Indications and contraindications of massage, basic active, active assisted, active resisted range of motion and isometric exercises are learned. First aid course is also given.
PREREQUISITE: PHYSICAL THERAPY MAJORS ONLY.

PTS571 Therapeutic Physiology
2 credits  Fall Semester
Physiological effects of exercise and training for the healthy and diseased individual. The use of exercise for joint and muscle mobility, muscle strength, and cardiopulmonary function is included.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS572 Clinical Kinesiology and Biomechanics
3 credits  Fall Semester
A study of musculoskeletal structure and function, physiological and biomechanical factor, and principles underlying the kinematics and kinetic of normal and abnormal human motion.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS574 Clinical Evaluation
3 credits  Fall Semester
Basic evaluation skills for patients with various diseases and dysfunctions. Skills include clinical decision making, history taking, postural and functional assessment, surface palpation, manual muscle testing, and goniometric measurement. Classroom instruction and laboratory practice is included.
PREREQUISITE: PHYSICAL THERAPY MAJORS ONLY.

PTS575 Clinical Decision Making I
3 credits  Spring Semester
Introduction to physical therapy diagnosis, the disablement model, measurement of function screening, and the Physical Therapy Guide to Practice.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.
**PTS595 Selected Topics in Physical Therapy**
1-3 credits  Fall & Spring Semester & First & Second Summer Session
Topics in contemporary physical therapy clinical practice with focus on specialty areas such as neonatal pulmonary care, balance/vestibular dysfunction, geriatrics, pediatrics, obstetrics, and gynecology.

**PTS599 Independent Study in Physical Therapy**
1-3 credits  Fall & Spring Semester
Each course is designed to meet special interest demands of students.
PREREQUISITE: FOR PHYSICAL THERAPISTS; PERMISSION OF THE INSTRUCTOR.

**PTS606 Neurological Evaluation**
2 credits  Fall Semester
Comprehensive evaluation of the patient with neurological dysfunction. Emphasis is placed on decision making, differential diagnosis, selection, and interpretation of examination components.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

**PTS608 Human Gait and Locomotion**
2 credits  Fall Semester
Principles of human gait and locomotion, including normal and pathological gait. Analysis of deviations, causes and specific treatments to address movement dysfunctions.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

**PTS610 Clinical Internship I**
2 credits  Fall Semester
Supervised clinical education emphasizing clinical skills. Competence is expected in areas such as analysis of normal and abnormal human motion, exercise, and evaluation and treatment for cardiopulmonary dysfunctions.
PREREQUISITE: PHYSICAL THERAPY MAJORS ONLY.

**PTS611 Clinical Internship II**
2 credits  Fall Semester
Supervised clinical education emphasizing clinical skills. Competence is expected in areas such as evaluation and treatment of extremity dysfunctions, wound care, and neuromuscular dysfunctions.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

**PTS614 Neurorehabilitation I**
3 credits  Spring Semester
The theoretical basis and clinical application of the neurophysiological approaches to treatment. Principles of motor control dynamic systems, sensori-motor development, and integration are presented to include discussion and practice of methods of evaluation and intervention. Treatment principles, approaches, and techniques as advocated by the Bobaths, Rood, Brunnstrom, Knott, and Voss are emphasized. An integrated and symptomatic approach, which reinforces the problem solving/differential diagnosis process involved in client care is utilized.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

**PTS615 Rehabilitation of the Complex Patient**
3 credits  First & Second Summer Session
Rehabilitation of the complex patient, including spinal cord injury, traumatic brain injury, multi-system, and multi-organ disease.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.
PTS617 Clinical Research II
3 credits  Fall Semester
This course is a continuation of Clinical Research I that provides the student with continued guidance in the completion of the faculty led research project begun as part of Clinical Research I. A series of lectures also provide exposure to additional topics relevant to clinical research in Physical Therapy. Potential lecture topics include data analysis, design, error, philosophy of science, and research reporting.
PREREQUISITE: PTS 616; FOR PHYSICAL THERAPY MAJORS ONLY.

PTS618 Physical Therapy Administration
3 credits  First & Second Summer Session
Course discusses physical therapy services, departmental policies and procedures, and personnel management. Issues relevant to clinical practice and the physical therapy profession are emphasized. An administrative project.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS620 Biomechanical Basis of Human Movement
3 credits  Fall Semester
A study of the basic biomechanical principles underlying the kinetics and kinematics of normal and abnormal human motion as well as the measurement of human movement.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS.

PTS621 Measurement of Impairment and Function in Human Movement
3 credits  Spring Semester
A study of measurement tools utilized in the analysis of normal and abnormal human motion.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS.

PTS622 Pathobiology of Human Function I
3 credits  Spring Semester
Pathophysiology of musculo-skeletal processes that impair human function including skeletal muscle; skin, tendons, ligaments, cartilage; bone; and cardiorespiratory.
PREREQUISITE: PERMISSION OF THE INSTRUCTOR

PTS624 Cardio-Respiratory Physical Therapy
3 credits  Spring Semester
The skills necessary for the evaluation and treatment of patients with various cardio-respiratory diseases and dysfunctions. Inpatient and outpatient cardiac and respiratory rehabilitation is included. Research on prevention of cardio-respiratory diseases and dysfunctions as it relates to evaluative, and therapeutic methods is also discussed. Course utilizes classroom instruction, individual investigation, laboratory practice, and clinical experience.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS626 Therapeutic Exercise
3 credits  Spring Semester
A holistic approach to the evaluation, treatment, and management of patients with various neuromuscular diseases and dysfunctions. Appropriate therapeutic exercises interrelated with modalities and self-help devices as well as individual investigation of respective neuromuscular diseases and dysfunctions. Classroom instruction and laboratory practice are included.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.
PTS627 Prosthetics and Orthotics  
3 credits  
Spring Semester  
A holistic approach to the evaluation and management of patients with amputations and spinal cord injuries. Appropriate therapeutic exercises interrelated with self-help appliances as well as individual investigation of respective amputation and spinal cord problems are emphasized. Classroom instruction and laboratory practice are included. 
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS628 Musculoskeletal Examination and Treatment I  
3 credits  
Spring Semester  
In-depth examination of differential diagnosis of various extremity dysfunctions with principles of examining soft tissue, bony and post-surgical problems relevant to the shoulder, elbow, wrist/hand, hip, knee, ankle, and foot. Manual therapy/joint mobilizations for each joint will also be introduced. 
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS629 Management of the Spine  
3 credits  
First & Second Summer Session  
The evaluation and treatment of various spinal dysfunctions. Review and investigation of the literature relevant to the sacro-iliac, lumbar, thoracic, cervical spines, and the head and neck. Clinical evaluation and treatment procedures is included. Course utilizes classroom instruction, laboratory practice, and clinical experience. 
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS630 Pediatric Physical Therapy  
2 credits  
Spring Semester  
An overview of factors and issues related to examination and treatment of children by physical therapists. 
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS631 Geriatric Physical Therapy  
2 credits  
Spring Semester  
An overview of factors and issues related to examination and treatment of older individuals by physical therapists. 
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS643 Measuring Health Outcomes  
3 credits  
Offered By Announcement Only  
The more common acute and chronic diseases that affect the elderly requiring physical therapy are examined, and the latest rehabilitation methods for treatment are researched and discussed. In addition to a discussion of acute vs. chronic disease and a discussion of the physiology of pain, diseases such as sensory impairment, CVA, cardiopulmonary disorders, diabetes, osteo and rheumatoid arthritis, cancer and Parkinson's disease are featured. PTS 644. Integrated Sports and Leisure 3 cr. This course is designed to promote the integration of able-bodied students with the physically challenged by working together to learn common recreational activities. The course will use sailing and camping activities as an educational tool for able-bodied students to learn the capabilities, physical resources and assistance required by physically challenged individuals. Through a cooperative effort, students will learn the skills necessary for sailing and outdoor camping and how to teach the same skills to others. 
PREREQUISITE: PT PHD STUDENT
PTS644 Integrated Sports and Leisure
1-3 credits Spring Semester
Course promotes the integration of able-bodied students with the physically challenged by working together to learn common recreational activities. Sailing and camping activities are used as an educational tool for able-bodied students to learn the capabilities, physical resources, and assistance required by physically challenged individuals.

PTS645 Integumentary Disorders and Treatment
2 credits Fall Semester
Basic and advanced principles regarding the integumentary system and related disorders, as well as principles of wound healing and wound care therapies.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS648 Musculoskeletal Examination and Treatment II
3 credits Fall Semester
Advanced examination, evaluation, functional assessment and treatment of patients in selected specialty areas of musculoskeletal physical therapy, with emphasis on functional outcomes and evidence based treatment throughout the life span.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS655 Neuromuscular Basis of Movement
3 credits Spring Semester
Concepts of neuromuscular production and regulation of movement with emphasis on neurophysiologic substrates and mechanisms underlying motor behavior.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY, OTHERS WITH PERMISSION OF INSTRUCTOR.

PTS660 Theories of Movement Science
3 credits Fall Semester
An in-depth review of classical theories and recent research in the movement sciences, to include the study and analysis of system theory and neurobiological substrates.
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

PTS661 Motor Learning
3 credits Spring Semester
The factors relating to, and affecting, the acquisition and performance of motor skills. Qualification of skill acquisition and performance are explored.
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

PTS662 Advanced Topics in Neurodevelopment
3 credits Offered By Announcement Only
Classical research and systems models of neurodevelopment is reviewed, analyzed, and related to current research on various areas of human development throughout the lifespan.
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

PTS664 Seminars in Neuroscience
3 credits Offered By Announcement Only
This course explores the role and organization of the key units of the central and peripheral nervous systems at the molecular and cellular levels. The integrated functional physiology of systems neuroscience and behavioral neuroscience will be studied with special emphasis on neural contributions to involuntary and voluntary motor functions, perception, cognition, and learning.
PREREQUISITE: ACCEPTANCE INTO THE PHYSICAL THERAPY PHD STUDIES PROGRAM OR PERMISSION OF THE INSTRUCTOR.
PTS665 Health Promotion and Disease Prevention
2 credits First & Second Summer Session
The role of physical therapists in health promotion and disease prevention.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS666 Rehabilitation of the Amputee
3 credits Offered By Announcement Only
This course examines the scientific evidence related to the evaluation, treatment and management of clients who require intervention for diabetic foot and/or dysvascular limb potentially leading to amputation, amputation surgery, prosthetic appliances, functional assessment and amputee rehabilitation. Upper limb prosthetic management will also be examined.
PREREQUISITE: ACCEPTANCE INTO THE PHYSICAL THERAPY PHD STUDIES PROGRAM OR PERMISSION OF THE INSTRUCTOR.

PTS667 Prosthetic Technology and Amputee Rehabilitation
3 credits Offered By Announcement Only
This course examines the current scientific evidence related to prosthetic devices with regard to evaluation, fabrication, materials, fitting and functional outcomes. Emphasis is on state-of-the-art technology and the future of prosthetic designs.
PREREQUISITE: ACCEPTANCE INTO THE PHYSICAL THERAPY PHD STUDIES PROGRAM OR PERMISSION OF THE INSTRUCTOR.

PTS668 Rehabilitation Engineering and Assistive Technology
3 credits Offered By Announcement Only
This course is designed for graduate students interested in developing an understanding of complementary roles of clinicians and engineers in assisting individuals with disabilities in all areas of life.
PREREQUISITE: ACCEPTANCE INTO THE PHYSICAL THERAPY PHD STUDIES PROGRAM OR PERMISSION FROM THE INSTRUCTOR.

PTS669 Seminars in Orthotics and Prosthetic Rehabilitation
3 credits Offered By Announcement Only
Examination of current scientific evidence and clinical issues related to upper and lower limb amputees, and prosthetic and orthotic componentry and related technology. Students will discuss case studies and design appropriate devices to address the needs of the individuals in the cases.
PREREQUISITE: ACCEPTANCE INTO THE PHYSICAL THERAPY PHD STUDIES PROGRAM OR PERMISSION OF THE INSTRUCTOR.

PTS670 Education, Direction, and Supervision in Physical Therapy
2 credits Spring Semester
Principles of education, direction and supervision pertaining to physical therapy patient care management. Prerequisite: Open to Physical Therapy majors.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS671 Complementary Therapies in Rehabilitation
2 credits Fall Semester
Historical development and evidence-based approach to complementary therapies in rehabilitation.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.
PTS674 Educational Administration in Physical Therapy  
3 credits  
Spring Semester  
Review of history and current issues in educational administration of physical therapy programs at the entry-level and post-graduate level.  
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

PTS675 Clinical Decision Making II  
3 credits  
Fall Semester  
Integration of basic science and clinical science in developing a patient plan of care, with consideration of ethical, psychological, and economic factors.  
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS677 Instructional Methods in Physical Therapy Education  
3 credits  
Fall Semester  
Overview of research in the professional education field, with specific applications to physical therapy academic and clinical education. Emphasis is placed on curriculum development, competency-based instructional design, testing, and instructional evaluation methods.  
PREREQUISITE: ADMISSION TO THE PH.D. PROGRAM.

PTS678 Teaching Practicum  
1- 3 credits  
Fall & Spring Semester & First & Second Summer Session  
Supervised instructional design, teaching and evaluation of entry level physical therapy students. Students participate as course instructors in entry-level master's degree physical therapy curriculum.  
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

PTS679 Anatomy of back and limbs.  
3 credits  
Offered By Announcement Only  
Regional approach to the musculoskeletal, neural, and vascular systems of the back, upper limbs and lower limbs. For Physical Therapy graduate students with an interest in a professional career in teaching the anatomical sciences to students of the health professions including medical students.  
PREREQUISITE: ACCEPTANCE INTO THE PHYSICAL THERAPY PHD STUDIES PROGRAM OR PERMISSION OF THE INSTRUCTOR.

PTS680 Anatomy of the Trunk  
3 credits  
Offered By Announcement Only  
Regional approach to the musculoskeletal, organ, and circulatory systems of the thorax, abdomen, pelvis & perineum. For Physical Therapy graduate students with an interest in a professional career in teaching the anatomical sciences to students of the health professions including medical students.  
PREREQUISITE: ACCEPTANCE INTO THE PHYSICAL THERAPY PHD STUDIES PROGRAM OR PERMISSION OF THE INSTRUCTOR.

PTS681 Anatomy of the Head and Neck  
3 credits  
Offered By Announcement Only  
Regional approach to the musculoskeletal, neural, and vascular systems of the head and neck. For the Physical Therapy graduate students with an interest in a professional career in teaching the anatomical sciences to students of the health professions including medical students.  
PREREQUISITE: ACCEPTANCE INTO THE PHYSICAL THERAPY PHD STUDIES PROGRAM OR PERMISSION OF THE INSTRUCTOR.
PTS682 Microscopic Anatomy.
3 credits
Offered By Announcement Only
Study of the structure and function of cells, tissues, and organ systems utilizing light microscope, electron microscopic images, and electronic media. This course is designed for Physical Therapy graduate students with an interest in a professional career in teaching the anatomical sciences to students of the health professions including medical students.
PREREQUISITE: ACCEPTANCE INTO THE PHYSICAL THERAPY PHD STUDIES PROGRAM OR PERMISSION OF THE INSTRUCTOR.

PTS683 Human Embryology
3 credits
Spring Semester
Study of embryologic events from fertilization to birth in the human. Consideration of the early formation of the various organ systems, on clinical problems associated with birth defects, and means of prevention.
PREREQUISITE: ACCEPTANCE INTO THE PHYSICAL THERAPY PHD STUDIES PROGRAM OR PERMISSION OF THE INSTRUCTOR.

PTS684 Human Neuroanatomy
3 credits
Offered By Announcement Only
Detailed exploration of the human nervous system with an emphasis on structure-function relationship and clinical applications. This course is designed for Physical Therapy graduate students with an interest in a professional career in teaching the anatomical sciences to students of the health professions including medical students.
PREREQUISITE: ACCEPTANCE INTO THE PHYSICAL THERAPY PHD STUDIES PROGRAM OR PERMISSION OF THE INSTRUCTOR.

PTS685 Medical Diagnostic Tests
2 credits
Fall Semester
Basic principles of medical diagnostic tests commonly encountered in physical therapy.
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.

PTS690 Physical Therapy Diagnosis
3 credits
Spring Semester
Study of the integration of didactic knowledge, clinical skills, and intuitive process into the formation of a clinical diagnosis which will direct treatment in physical therapy. Diagnosis as a process is compared to diagnosis in nursing, psychiatry, and medicine, and distinguished from assessment, examination, and screening.
PREREQUISITE: PRACTICING PHYSICAL THERAPIST.

PTS691 Role Seminar 1: Academic Leadership
1 credit
Offered By Announcement Only
PREREQUISITE: PT PHD STUDENT

PTS692 Role Seminar 2: Research
1 credit
Offered By Announcement Only
PREREQUISITE: PT PHD STUDENT

PTS695 Clinical Research Methods I
3 credits
Fall Semester
An overview of measurement and sampling issues pertaining to clinical research in Physical Therapy.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
PTS696 Applied Statistics in Physical Therapy  
3 credits  Fall Semester  
Basic Statistics taught from an applied perspective which includes statistical computing using SAS in a mainframe environment and interpretation of SAS output.  
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

PTS697 Clinical Research Methods II  
3 credits  Spring Semester  
A course focusing on issues in research design and analysis pertaining to clinical research in Physical Therapy.  
PREREQUISITE: PTS 695, 696, OR PERMISSION OF THE INSTRUCTOR.

PTS698 Research Practicum  
3 credits  Fall & Spring Semester & First & Second Summer Session  
Practicum designed to familiarize the student with an area of research, to implement a pilot study in an area of interest, and to develop working relationship with a sponsoring faculty member.  
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

PTS699 Independent Study in Physical Therapy  
1- 3 credits  Fall & Spring Semester & First & Second Summer Session  
Each course is designed to meet the needs of graduate students for in-depth study in a particular area of special interest.  
PREREQUISITE: GRADUATE STUDENT STATUS; PERMISSION OF THE INSTRUCTOR.

PTS702 Special Internship  
1- 3 credits  Offered By Announcement Only  
Introduction to faculty role in an institution of higher education, including faculty development and evaluation systems, educational leadership, and student advising.  
PREREQUISITE: PHYSICAL THERAPY MAJORS ONLY

PTS703 Clinical Internship III  
2 credits  Spring Semester  
Initiation of research career and dynamics of research role development within an institution. Grant writing, funding sources, and proposal considerations are also covered.  
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY

PTS704 Clinical Internship IV  
0- 2 credits  Spring Semester  
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY

PTS712 Clinical Internship III  
3 credits  Fall & Spring Semester & First & Second Summer Session  
Supervised clinical education emphasizing clinical skills. Competence is expected in areas such as neurofacilitation techniques, and evaluation and treatment of amputees, central nervous system dysfunctions, and spinal cord dysfunction.  
PREREQUISITE: FOR PHYSICAL THERAPY MAJORS ONLY.
PTS713 Clinical Internship IV
1-3 credits Fall & Spring Semester & First & Second Summer Session
Supervised clinical education emphasizing skills previously taught in course sequences.
Competence is expected in areas such as conservative management of spinal dysfunctions,
growth and development neurofacilitation techniques, central nervous system dysfunctions,
clinical administrative procedures, and clinical research techniques.
PREREQUISITE: MUST BE IN THE P.T. MASTERS PROGRAM.

PTS730 Pre-candidacy Dissertation.
1-6 credits Fall & Spring Semester & First & Second Summer Session
To be used for pre-candidacy Doctorate dissertation research.

PTS740 Post-candidacy Dissertation.
1-12 credits Fall & Spring Semester & First & Second Summer Session
The student will enroll for credits as determined by his/her advisor, but not for
less than a total of 12. No more than six hours may be taken in a regular semester,
nor more than three in a summer session. When a student has passed his/her qualifying
exams and is engaged in an Assistantship, he/she may still take the maximum allowable
credit stated above.

PTS750 Research in Residence
0 credit Fall & Spring Semester & First & Second Summer Session
To establish residence for the PhD, or DPT, after the student has been enrolled
for the permissible cumulative total in appropriate doctoral research or clinical
practice. Credit not granted, may be regarded as full-time residence as determined
by the Dean of the Graduate School.
PREREQUISITE: PERMISSION OF THE DIRECTOR.

PHYSIOLOGY & BIOPHYSICS

PHS510 Cell Physiology Biophysics
2 credits Fall Semester
This course is designed as preparation for the study of mammalian physiology. Course
is usually intensive, adapted to the schedule of the medical curriculum and occupying
the equivalent of two to three days per week for two-three weeks. The student is
introduced to general principles of cell physiology, chemical and physical structure
of membranes, membrane transport, and electrical membrane phenomena. Topics include
excitation, contraction, energy transduction, nerve impulse conduction, and synaptic
transmission. Course utilizes lecture and laboratory.
PREREQUISITE: PERMISSION OF THE DEPARTMENTAL GRADUATE STUDIES COMMITTEE.

PHS511 Neurophysiology
3 credits Spring Semester
Physiology of the mammalian nervous system. Course is intensive, adapted to the
schedule of the medical curriculum and comprising roughly five hours of lecture
and four hours of conference weekly for five to six weeks. A lecture course coordinated
with neuroanatomy.
PREREQUISITE: PHS 510 OR 641, OR AN EQUIVALENT; PERMISSION OF THE DEPARTMENTAL
GRADUATE STUDIES COMMITTEE. PREREQUISITE OR COREQUISITE: MDB 505.

PHS512 Systemic Physiology
5 credits Spring Semester
Physiology of the mammalian cardiovascular, respiratory, renal, digestive, endocrine,
and reproductive systems. Course is intensive and adapted to the schedule of the
medical curriculum, occupying the equivalent of about two days a week for most
of semester. Lecture and laboratory are included.
PREREQUISITE: PERMISSION OF THE GRADUATE STUDIES COMMITTEE, INCLUDING ENDOCRINOLOGY.
PHS600 Research Seminar in Membrane Biophysics and Neurobiology
1 credit Fall & Spring Semester & First & Second Summer Session
The student may be required to present a short talk on a research area of interest.
All students in the Department of Physiology and Biophysics are required to register for this seminar. For other students, permission of the Departmental Graduate Studies Committee is required.

PHS609 Research
1-5 credits Fall & Spring Semester & First & Second Summer Session
Students work with individual members of the department on research problems. Orientation to the areas of research in the field and the techniques used is included.
PREREQUISITE: PERMISSION OF THE DEPARTMENTAL GRADUATE STUDIES COMMITTEE.

PHS620 Neurophysiology
3 credits Spring Semester
Physiology of the mammalian nervous system. The course will consist of both didactic lectures and discussions of current research literature.
PREREQUISITE: PHS 510 OR 641 AND PERMISSION OF THE DEPARTMENTAL GRADUATE STUDIES COMMITTEE.

PHS631 Special Work
1-5 credits Fall & Spring Semester & First & Second Summer Session
Special work, lecture, laboratory, reading, seminar, or a combination of these as determined by advisor in accordance with student's interest.
PREREQUISITE: PERMISSION OF THE DEPARTMENTAL GRADUATE STUDIES COMMITTEE.

PHS641 Principles of Membrane Physiology and Biophysics I
2 credits Fall Semester
Course discusses chemical and physical structure of membranes, model systems, permeability and transport, membrane potential, ionic channels, excitability in nerve and muscle, ionophores, active transport, and membrane receptors. Identical with MCP 641.
PREREQUISITE: CHM 361; BMB 506; AND PERMISSION OF DEPARTMENTAL GRADUATE STUDIES COMMITTEE.

PHS642 Principles of Membrane Physiology and Biophysics II
2 credits Fall Semester
Course topics include osmosis and cell volume, tracer analysis of permeability and compartmentation, theory of channels and carriers, cable properties, Hodgkin-Huxley formalism, Na, K, and Ca ion channels, regulation of cellular Na, Ca activities, single-channel analysis, chemical synapses, membrane receptors, cell junctions, excitation and E-C coupling in muscle. Identical with MCP 642.
PREREQUISITE: PHS 641.

PHS669 Nerve and Synapse
2 credits Fall Semester
An advanced seminar course in the basic mechanisms underlying the propagated nerve impulse and synaptic transmission.
PREREQUISITE: PHS 510 AND 511; CONSENT OF INSTRUCTOR AND DEPARTMENTAL GRADUATE STUDIES COMMITTEE.
PHS680 Research Ethics
0 credit  Fall Semester
The NIH Guide for Grants and Contracts stipulates that Institutions receiving support
for National Research Service Award Training Grants are required to develop a program
in the principles of Scientific Integrity. This program should be an integral part
of the proposed training effort. The University of Miami School of Medicine has
chosen to respond to this requirement with this course. This course must be taken
during the first semester in the Department or Program. This is a six-hour course
and will be given in two sessions of three hours each.
PREREQUISITE: PERMISSION OF THE GRADUATE ADVISOR.

PHS710 Master's Thesis
1-6 credits  Offered By Announcement Only
The student working on his/her master's thesis enrolls for credit, in most departments
not to exceed six, as determined by his/her advisor. Credit is not awarded until
the thesis has been accepted.

PHS720 Research in Residence
0 credit  Offered By Announcement Only
Used to establish research in residence for the thesis for the master's degree
after the student has enrolled for the permissible cumulative total in PHS 710
(usually six credits). Credit not granted. May be regarded as full time residence.

PHS730 Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. The student will enroll for credit as
determined by his/her advisor but not for less than a total of 24. Not more than
12 hours of PHS 730 may be taken in a regular semester, nor more than six in a
summer session. Where a student has passed his/her (a) qualifying examinations,
and (b) is engaged in an assistantship, he/she may still take the maximum allowable
credit stated above.

PHS740 Doctoral Dissertation- Post Candidacy
1-12 credits  Fall & Spring Semester & First & Second Summer Session

PHS750 Research in Residence
0 credit  Offered By Announcement Only
Used to establish research in residence for the Ph.D., after the student has been
enrolled for the permissible cumulative total in appropriate doctoral research.
Credit not granted. May be regarded as full-time residence as determined by the
Dean of the Graduate School.

PROGRAM IN BIOMEDICAL SCIENCES
PIB575 Perl Programming Lab
1 credit  Fall & Spring Semester
The Perl programming lab is for students who have little or no programming experience.
The objective of the lab is to teach students to write computer code that will
automate and speed up their genetic and genomic data analysis and provide new ways
to explore the data to advance knowledge discovery in biology. Each lab will start
with a 40 minute lecture in which we discuss new syntax and programming elements
and the rest of the time will be spent on hands-on programming assignments using
real genetic/genomic/proteomic data sets. Students will be monitored and will get
help in completing their assignments. In a popular book, "Programming Perl" (published
by O'Reilly Media), the programming language is described as: "Perl is a language
for getting your job done." A stated design goal of Perl is to make easy tasks
easier and difficult tasks possible.
PIB600 Journal Club/Seminar
0 credit  Fall & Spring Semester
All PIBS students are required to attend one journal club or seminar each week.

PIB601 Advanced Biomedical Science Lectures
5 credits  Fall Semester
An interdisciplinary survey of molecular and cellular biology. Topics include protein structure and function, protein synthesis, nucleic acids, genetic code, gene technology, genetic analysis, control of cellular activity, molecular anatomy of genes and chromosomes, DNA replication, repair, and recombination, regulation of transcription, RNA processing, and post-transcriptional control.
PREREQUISITE: PERMISSION OF INSTRUCTOR

PIB602 Scientific Reasoning
3 credits  Fall Semester
Students are taught with a combination of lectures, scientific reasoning and methods classes, and small group sessions devoted to primary literature.
PREREQUISITE: PERMISSION OF INSTRUCTOR

PIB611 Accelerated Basic Science Medical Curriculum
1-18 credits  Fall & Spring Semester
Beginning in the latter part of June each year, extending to the middle of February of the ensuing year, the following accelerated and intensive complete basic science medical curriculum is offered: Embryology, Gross Anatomy, Histology, Biochemistry, Neuroanatomy, Biophysics and Neurophysiology, Systemic Physiology, Pathology, Medical Microbiology, and Pharmacology. A single grade will be entered on the graduate transcript for this course.
PREREQUISITE: ADMISSION TO THE COMBINED M.D./PH.D PROGRAM

PIB631 PIB 631 Special Work
1-6 credits  Fall & Spring Semester & First & Second Summer Session
1 - 6 credits Special work, lecture, laboratory or a combination of these, as determined by advisor in accord with student's individual interest. Course is offered only on demand.
PREREQUISITE: PERMISSION FROM ADVISOR

PIB640 The Business of Science
3 credits  Fall & Spring Semester
This survey course will introduce graduate students in the biomedical sciences and medical students to the basic principles of business to enhance their effectiveness in being professional scientists. Topics will include: Project Management, Personnel Management, Accounting and Budgeting Process, Invention Disclosures and Patents, and Developing a Business Plan. Students will develop mock projects and business plans and participate in workshops to develop practical skills.
PREREQUISITE: PERMISSION OF INSTRUCTOR AND SUCCESSFUL COMPLETION OF THE FIRST YEAR OF GRADUATE LEVEL WORK
PIB680 Research Ethics

0 credit  Fall Semester

The NIH Guide for Grants and Contracts stipulates that Institutions receiving support for National Research Service Award Training Grants are required to develop a program in the principles of Scientific Integrity. This program should be an integral part of the proposed training effort. The University of Miami School of Medicine has chosen to respond to this requirement with this course. This course must be taken during the first semester in the department or program. This is a six-hour course and will be given in two sessions of three hours each.

PREREQUISITE: PERMISSION OF THE GRADUATE ADVISOR

PIB730 Doctoral Dissertation

1-12 credits  Fall & Spring Semester & First & Second Summer Session
DAN550 Women in Theatrical Dance
3 credits  Offered By Announcement Only
Women in Dance; the most prominent dancers and choreographers from the 19th and 20th centuries who helped shape western theatrical dance art.
PREREQUISITE: DAN 250 OR 450 OR GRADUATE STUDENT.

DAN585 Methods of Teaching Dance K-12 (Advanced)
3 credits  Offered By Announcement Only
An advanced study of the Dance curriculum content in a variety of settings including public schools, grades K-12.
PREREQUISITE: DAN 411 OR 450 AND PERMISSION.

DAN593 Special Topics Dance
1- 3 credits  Fall & Spring Semester & First & Second Summer Session
Supervised topics and other activities in specific areas of Dance
PREREQUISITE: NONE

INSTRUMENTAL PERFORMANCE

MIPBAI Bassoon
1- 4 credits  Fall & Spring Semester
Mastery of technical aspects of bassoon performance. Preparation of Masters recital(s) and oral defense. Preparation of repertoire for audition for further study or professional placement. Related areas such as reed making, specific individualized studies, instrumental maintenance, and orchestral excerpts are also part of the curriculum.
PREREQUISITE: MASTER'S LEVEL. BY AUDITION.

MIPBAJ Bassoon
1- 4 credits  Fall & Spring Semester
Mastery of technical aspects of bassoon performance. Preparation of Masters recital(s) and oral defense. Preparation of repertoire for audition for further study or professional placement. Related areas such as reed making, specific individualized studies, instrumental maintenance, and orchestral excerpts are also part of the curriculum.
PREREQUISITE: MASTER'S LEVEL. MIP BAI.

MIPBAK Bassoon
1- 4 credits  Fall & Spring Semester & First & Second Summer Session
Mastery of technical aspects of bassoon performance. Preparation of Masters recital(s) and oral defense. Preparation of repertoire for audition for further study or professional placement. Related areas such as reed making, specific individualized studies, instrumental maintenance, and orchestral excerpts are also part of the curriculum.
PREREQUISITE: MASTER'S LEVEL. MIP BAJ.

MIPBAL Bassoon
1- 4 credits  Fall & Spring Semester
Mastery of technical aspects of bassoon performance. Preparation of Masters recital(s) and oral defense. Preparation of repertoire for audition for further study or professional placement. Related areas such as reed making, specific individualized studies, instrumental maintenance, and orchestral excerpts are also part of the curriculum.
PREREQUISITE: MASTER'S LEVEL. MIP BAK.
MIPBAM Bassoon
1-4 credits    Fall & Spring Semester
Continued mastery of technical aspects of bassoon performance. Preparation of DMA recitals and oral defense. Preparation of repertoire for audition for professional placement. An overview of pedagogy materials for performance and teaching use will also be explored.
PREREQUISITE: DOCTORAL LEVEL. MIP BAL.

MIPBAN Bassoon
1-4 credits    Fall & Spring Semester
Continued mastery of technical aspects of bassoon performance. Preparation of DMA recitals and oral defense. Preparation of repertoire for audition for professional placement. An overview of pedagogy materials for performance and teaching use will also be explored.
PREREQUISITE: DOCTORAL LEVEL. MIP BAM.

MIPBAO Bassoon
1-4 credits    Fall & Spring Semester
Continued mastery of technical aspects of bassoon performance. Preparation of DMA recitals and oral defense. Preparation of repertoire for audition for professional placement. An overview of pedagogy materials for performance and teaching use will also be explored.
PREREQUISITE: DOCTORAL LEVEL. MIP BAN.

MIPBAP Bassoon
1-4 credits    Fall & Spring Semester
Continued mastery of technical aspects of bassoon performance. Preparation of DMA recitals and oral defense. Preparation of repertoire for audition for professional placement. An overview of pedagogy materials for performance and teaching use will also be explored.
PREREQUISITE: DOCTORAL LEVEL. MIP BAO.

MIPBAQ Bassoon
1-4 credits    Fall & Spring Semester
Continued mastery of technical aspects of bassoon performance. Preparation of DMA recitals and oral defense. Preparation of repertoire for audition for professional placement. An overview of pedagogy materials for performance and teaching use will also be explored.
PREREQUISITE: DOCTORAL LEVEL. MIP BAP.

MIPBAR Bassoon
1-4 credits    Fall & Spring Semester
Continued mastery of technical aspects of bassoon performance. Preparation of DMA recitals and oral defense. Preparation of repertoire for audition for professional placement. An overview of pedagogy materials for performance and teaching use will also be explored.
PREREQUISITE: DOCTORAL LEVEL. MIP BAQ.

MIPBHI Baritone Horn
1-4 credits    Fall & Spring Semester
PREREQUISITE: MASTER’S LEVEL. MIP BHH.

MIPBHJ Baritone Horn
1-4 credits    Fall & Spring Semester
PREREQUISITE: MASTER’S LEVEL. MIP BHI.
SCHOOL OF MUSIC

INSTRUMENTAL PERFORMANCE

MIPBHK Baritone Horn
1- 4 credits  Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: MASTER'S LEVEL. MIP BHJ.

MIPBHL Baritone Horn
1- 4 credits  Fall & Spring Semester
PREREQUISITE: MASTER'S LEVEL. MIP BHK.

MIPBHM Baritone Horn
1- 4 credits  Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP BHL.

MIPBHN Baritone Horn
1- 4 credits  Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP BHM.

MIPBHO Baritone Horn
1- 4 credits  Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP BHN.

MIPBHP Baritone Horn
1- 4 credits  Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP BHO.

MIPBHQ Baritone Horn
1- 4 credits  Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP BHQ.

MIPCDI Conducting
1- 4 credits  Fall & Spring Semester
PREREQUISITE: MASTER'S LEVEL. MIP CDH.

MIPCDJ Conducting
1- 4 credits  Fall & Spring Semester
PREREQUISITE: MASTER'S LEVEL. MIP CDI.

MIPCDK Conducting
1- 4 credits  Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: MASTER'S LEVEL. MIP CDJ.

MIPCDL Conducting
1- 4 credits  Fall & Spring Semester
PREREQUISITE: MASTER'S LEVEL. MIP CDK.

MIPCDM Conducting
1- 4 credits  Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP CDL.

MIPCDN Conducting
1- 4 credits  Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP CDM.
SCHOOL OF MUSIC

INSTRUMENTAL PERFORMANCE

MIPCDO Conducting
   1- 4 credits    Fall & Spring Semester
   PREREQUISITE: DOCTORAL LEVEL. MIP CDN.

MIPCDP Conducting
   1- 4 credits    Fall & Spring Semester
   PREREQUISITE: DOCTORAL LEVEL. MIP CDO.

MIPCDQ Conducting
   1- 4 credits    Fall & Spring Semester
   PREREQUISITE: DOCTORAL LEVEL. MIP DQ.

MIPCDR Conducting
   1- 4 credits    Fall & Spring Semester
   PREREQUISITE: DOCTORAL LEVEL. MIP DR.

MIPCLI Clarinet
   1- 4 credits    Fall & Spring Semester
   PREREQUISITE: MASTER'S LEVEL. MIP CLH.

MIPCLJ Clarinet
   1- 4 credits    Fall & Spring Semester
   PREREQUISITE: MASTER'S LEVEL. MIP CLI.

MIPCLK Clarinet
   1- 4 credits    Fall & Spring Semester & First & Second Summer Session
   Prerequisite: Master's level.
   PREREQUISITE: MASTER'S LEVEL. MIP CLJ.

MIPCLL Clarinet
   1- 4 credits    Fall & Spring Semester
   PREREQUISITE: MASTER'S LEVEL. MIP CLK.

MIPCLM Clarinet
   1- 4 credits    Fall & Spring Semester
   PREREQUISITE: DOCTORAL LEVEL. MIP CLM.

MIPCLN Clarinet
   1- 4 credits    Fall & Spring Semester
   PREREQUISITE: DOCTORAL LEVEL. MIP CLN.

MIPCLO Clarinet
   1- 4 credits    Fall & Spring Semester
   PREREQUISITE: DOCTORAL LEVEL. MIP Klo.

MIPCLP Clarinet
   1- 4 credits    Fall & Spring Semester
   PREREQUISITE: DOCTORAL LEVEL. MIP CLP.

MIPCLQ Clarinet
   1- 4 credits    Fall & Spring Semester
   PREREQUISITE: DOCTORAL LEVEL. MIP CLQ.
MIPCLR Clarinet
1-4 credits  Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP CLQ.

MIPDBI Double Bass
1-4 credits  Fall & Spring Semester
Advanced study of the double bass. Preparation for Master's recitals, and oral defense, orchestral repertoire, planning auditions, and insights on teaching.
PREREQUISITE: MASTER'S LEVEL. MIP DBH.

MIPDBJ Double Bass
1-4 credits  Fall & Spring Semester
Advanced study of the double bass. Preparation for Master's recitals, and oral defense, orchestral repertoire, planning auditions, and insights on teaching.
PREREQUISITE: MASTER'S LEVEL. MIP DBI.

MIPDBK Double Bass
1-4 credits  Fall & Spring Semester & First & Second Summer Session
Advanced study of the double bass. Preparation for Master's recitals, and oral defense, orchestral repertoire, planning auditions, and insights on teaching.
PREREQUISITE: MASTER'S LEVEL. MIP DBJ.

MIPDBL Double Bass
1-4 credits  Fall & Spring Semester
Advanced study of the double bass. Preparation for Master's recitals, and oral defense, orchestral repertoire, planning auditions, and insights on teaching.
PREREQUISITE: MASTER'S LEVEL. MIP DBK.

MIPDBM Double Bass
1-4 credits  Fall & Spring Semester
Preparation of qualifying and DMA recitals and oral defense. Continuation of advanced orchestral repertoire and methods and audition preparation.
PREREQUISITE: DOCTORAL LEVEL. MIP DBL.

MIPDBN Double Bass
1-4 credits  Fall & Spring Semester
Preparation of qualifying and DMA recitals and oral defense. Continuation of advanced orchestral repertoire and methods and audition preparation.
PREREQUISITE: DOCTORAL LEVEL. MIP DBM.

MIPDBO Double Bass
1-4 credits  Fall & Spring Semester
Preparation of qualifying and DMA recitals and oral defense. Continuation of advanced orchestral repertoire and methods and audition preparation.
PREREQUISITE: DOCTORAL LEVEL. MIP DBN.

MIPDBP Double Bass
1-4 credits  Fall & Spring Semester
Preparation of qualifying and DMA recitals and oral defense. Continuation of advanced orchestral repertoire and methods and audition preparation.
PREREQUISITE: DOCTORAL LEVEL. MIP DBO.
MIPDBQ Double Bass  
1-4 credits  Fall & Spring Semester  
Preparation of qualifying and DMA recitals and oral defense. Continuation of advanced orchestral repertoire and methods and audition preparation.  
PREREQUISITE: DOCTORAL LEVEL. MIP DBP.

MIPDBR Double Bass  
1-4 credits  Fall & Spring Semester  
Preparation of qualifying and DMA recitals and oral defense. Continuation of advanced orchestral repertoire and methods and audition preparation.  
PREREQUISITE: DOCTORAL LEVEL. MIP DBQ.

MIPFHI French Horn  
1-4 credits  Fall & Spring Semester  
Emphasis will be on an assessment of students' skills, needs and repertoire experience. Materials will be explored from the standard etude and solo literature that is relevant to the students' level and skill needs. Exploration will begin to choose material for a solo recital in the Spring semester.  
PREREQUISITE: MASTER'S LEVEL. MIP FHH.

MIPFHK French Horn  
1-4 credits  Fall & Spring Semester & First & Second Summer Session  
Further exploration of solo and chamber music repertoire. Orchestral literature will take a larger role in preparation for auditions. An overview of pedagogy materials for performance and teaching use will also be explored.  
PREREQUISITE: MASTER'S LEVEL. MIP FHJ.

MIPFHJ French Horn  
1-4 credits  Fall & Spring Semester  
Focus on audition preparation and repertoire for the final Master's recital.  
PREREQUISITE: MASTER'S LEVEL. MIP FHK.

MIPFHM French Horn  
1-4 credits  Fall & Spring Semester  
Students' skill needs will be assessed and a course of study developed for any remedial needs. An in-depth study of appropriate literature for both solo and chamber recitals will be undertaken in preparation for a long-term degree plan. Advanced study of Orchestral Literature will begin, including listening and score study. Repertoire for an initial recital and the Qualifying Recital will be chosen and prepared.  
PREREQUISITE: DOCTORAL LEVEL. MIP FHL.
MIPFHN French Horn
1-4 credits    Fall & Spring Semester
The initial Doctoral Recital and the Qualifying Recital will be presented. Repertoire
for these recitals will be the main focus but the Study of Orchestral Literature
will remain a constant.
PREREQUISITE: DOCTORAL LEVEL. MIP FHM.

MIPFHO French Horn
1-4 credits    Fall & Spring Semester
Repertoire exploration for either the Solo recital or the Chamber Music recital
along with continuing Orchestral Literature study.
PREREQUISITE: DOCTORAL LEVEL. MIP FHN.

MIPFHP French Horn
1-4 credits    Fall & Spring Semester
Final preparation and presentation for either the Solo recital or Chamber Music
recital. Preparation for Orchestral auditions will also continue.
PREREQUISITE: DOCTORAL LEVEL. MIP FHO.

MIPFHQ French Horn
1-4 credits    Fall & Spring Semester
Repertoire exploration for the final recital along with Orchestral audition preparation.
An overview of pedagogical materials will be explored and prepared as possible
 teaching tools.
PREREQUISITE: DOCTORAL LEVEL. MIP FHP.

MIPFHR French Horn
1-4 credits    Fall & Spring Semester
Final preparation and presentation of remaining recital. Preparation for auditions
 should be advanced enough that the student can begin to take auditions. This will
provide the opportunity for follow up work on audition skills and techniques.
PREREQUISITE: DOCTORAL LEVEL. MIP FHQ.

MIPFLI Flute
1-4 credits    Fall & Spring Semester
Mastery of technical aspects of flute performance. Preparation of Masters recital(s)
 and oral defense. Preparation of repertoire for audition for further study or professional
 placement. Related areas such as specific individualized studies, instrumental
 maintenance, and orchestral excerpts are also part of the curriculum.
PREREQUISITE: MASTER’S LEVEL. MIP FLH.

MIPFLJ Flute
1-4 credits    Fall & Spring Semester
Mastery of technical aspects of flute performance. Preparation of Masters recital(s)
 and oral defense. Preparation of repertoire for audition for further study or professional
 placement. Related areas such as specific individualized studies, instrumental
 maintenance, and orchestral excerpts are also part of the curriculum.
PREREQUISITE: MASTER’S LEVEL. MIP FLI.
SCHOOL OF MUSIC

INSTRUMENTAL PERFORMANCE

MIPFLK Flute
1- 4 credits  Fall & Spring Semester & First & Second Summer Session
Mastery of technical aspects of flute performance. Preparation of Masters recital(s) and oral defense. Preparation of repertoire for audition for further study or professional placement. Related areas such as specific individualized studies, instrumental maintenance, and orchestral excerpts are also part of the curriculum.
PREREQUISITE: MASTER'S LEVEL. MIP FLJ.

MIPFLL Flute
1- 4 credits  Fall & Spring Semester
Mastery of technical aspects of flute performance. Preparation of Masters recital(s) and oral defense. Preparation of repertoire for audition for further study or professional placement. Related areas such as specific individualized studies, instrumental maintenance, and orchestral excerpts are also part of the curriculum.
PREREQUISITE: MASTER'S LEVEL. MIP FLK.

MIPFLM Flute
1- 4 credits  Fall & Spring Semester
Continue mastery of technical aspects of flute performance. Preparation of DMA recitals and oral defense. Preparation of repertoire for audition for professional placement. An overview of pedagogy materials for performance and teaching use will also be explored.
PREREQUISITE: DOCTORAL LEVEL. MIP FLM.

MIPFLN Flute
1- 4 credits  Fall & Spring Semester
Continue mastery of technical aspects of flute performance. Preparation of DMA recitals and oral defense. Preparation of repertoire for audition for professional placement. An overview of pedagogy materials for performance and teaching use will also be explored.
PREREQUISITE: DOCTORAL LEVEL. MIP FLM.

MIPFLO Flute
1- 4 credits  Fall & Spring Semester
Continue mastery of technical aspects of flute performance. Preparation of DMA recitals and oral defense. Preparation of repertoire for audition for professional placement. An overview of pedagogy materials for performance and teaching use will also be explored.
PREREQUISITE: DOCTORAL LEVEL. MIP FLO.

MIPFLQ Flute
1- 4 credits  Fall & Spring Semester
Continue mastery of technical aspects of flute performance. Preparation of DMA recitals and oral defense. Preparation of repertoire for audition for professional placement. An overview of pedagogy materials for performance and teaching use will also be explored.
PREREQUISITE: DOCTORAL LEVEL. MIP FLP.
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MIPFLR Flute
1- 4 credits    Fall & Spring Semester
Continue mastery of technical aspects of flute performance. Preparation of DMA recitals and oral defense. Preparation of repertoire for audition for professional placement. An overview of pedagogy materials for performance and teaching use will also be explored.
PREREQUISITE: DOCTORAL LEVEL. MIP FLQ.

MIPGUI Guitar
1- 4 credits    Fall & Spring Semester
PREREQUISITE: MASTER’S LEVEL. MIP GUH.

MIPGUK Guitar
1- 4 credits    Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: MASTER’S LEVEL. MIP GUI.

MIPGUL Guitar
1- 4 credits    Fall & Spring Semester
PREREQUISITE: MASTER’S LEVEL. MIP GUK.

MIPGUM Guitar
1- 4 credits    Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP GUK.

MIPGUN Guitar
1- 4 credits    Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP GUM.

MIPGUO Guitar
1- 4 credits    Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP GUN.

MIPGUP Guitar
1- 4 credits    Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP GUO.

MIPGUQ Guitar
1- 4 credits    Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP GUQ.

MIPHAI Harp
1- 4 credits    Fall & Spring Semester
Advanced study of solo harp literature.
PREREQUISITE: MASTER’S LEVEL. MIP HAH.
MIPHAJ Harp  
1- 4 credits  Fall & Spring Semester  
Advanced study of solo harp literature.  
PREREQUISITE: MASTER’S LEVEL. MIP HAI.

MIPHAK Harp  
1- 4 credits  Fall & Spring Semester & First & Second Summer Session  
Advanced study of solo harp literature.  
PREREQUISITE: MASTER’S LEVEL. MIP HAJ.

MIPHAL Harp  
1- 4 credits  Fall & Spring Semester  
Advanced study of solo harp literature.  
PREREQUISITE: MASTER’S LEVEL. MIP HAK.

MIPHAM Harp  
1- 4 credits  Fall & Spring Semester  
Advanced study of solo harp literature.  
PREREQUISITE: DOCTORAL LEVEL. MIP HAL.

MIPHAN Harp  
1- 4 credits  Fall & Spring Semester  
Advanced study of solo harp literature.  
PREREQUISITE: DOCTORAL LEVEL. MIP HAM.

MIPHAO Harp  
1- 4 credits  Fall & Spring Semester  
Advanced study of solo harp literature.  
PREREQUISITE: DOCTORAL LEVEL. MIP HAO.

MIPHAQ Harp  
1- 4 credits  Fall & Spring Semester  
Advanced study of solo harp literature.  
PREREQUISITE: DOCTORAL LEVEL. MIP HAP.

MIPHAR Harp  
1- 4 credits  Fall & Spring Semester  
Advanced study of solo harp literature.  
PREREQUISITE: DOCTORAL LEVEL. MIP HAQ.

MIPOBI Oboe  
1- 4 credits  Fall & Spring Semester  
Mastery of technical aspects of oboe performance. Preparation of Masters recital(s) and Oral Defense. Preparation of audition repertoire for further study or professional placement. Related areas such as reed making, specific individualized studies, instrument maintenance, chamber music and orchestral excerpts are also part of the curriculum.  
PREREQUISITE: MASTER’S LEVEL. MIP OBH.
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MIPOBJ Oboe
1-4 credits Fall & Spring Semester
Mastery of technical aspects of oboe performance. Preparation of Masters recital(s) and Oral Defense. Preparation of audition repertoire for further study or professional placement. Related areas such as reed making, specific individualized studies, instrument maintenance, chamber music and orchestral excerpts are also part of the curriculum.
PREREQUISITE: MASTER'S LEVEL. MIP OBJ.

MIPOBK Oboe
1-4 credits Fall & Spring Semester & First & Second Summer Session
Mastery of technical aspects of oboe performance. Preparation of Masters recital(s) and Oral Defense. Preparation of audition repertoire for further study or professional placement. Related areas such as reed making, specific individualized studies, instrument maintenance, chamber music and orchestral excerpts are also part of the curriculum.
PREREQUISITE: MASTER'S LEVEL. MIP OBJ.

MIPOBL Oboe
1-4 credits Fall & Spring Semester
Mastery of technical aspects of oboe performance. Preparation of Masters recital(s) and Oral Defense. Preparation of audition repertoire for further study or professional placement. Related areas such as reed making, specific individualized studies, instrument maintenance, chamber music and orchestral excerpts are also part of the curriculum.
PREREQUISITE: MASTER'S LEVEL. MIP OBK.

MIPOBM Oboe
1-4 credits Fall & Spring Semester
Continue mastery of technical aspects of oboe performance. Preparation of DMA recitals and Oral Defense. Preparation of audition repertoire for professional placement. An overview of pedagogy materials for performance and teaching use will also be explored.
PREREQUISITE: DOCTORAL LEVEL. MIP OBL.

MIPOBN Oboe
1-4 credits Fall & Spring Semester
Continue mastery of technical aspects of oboe performance. Preparation of DMA recitals and Oral Defense. Preparation of audition repertoire for professional placement. An overview of pedagogy materials for performance and teaching use will also be explored.
PREREQUISITE: DOCTORAL LEVEL. MIP OBM.

MIPOBO Oboe
1-4 credits Fall & Spring Semester
Continue mastery of technical aspects of oboe performance. Preparation of DMA recitals and Oral Defense. Preparation of audition repertoire for professional placement. An overview of pedagogy materials for performance and teaching use will also be explored.
PREREQUISITE: DOCTORAL LEVEL. MIP OBN.
MIPOBP Oboe
1-4 credits Fall & Spring Semester
Continue mastery of technical aspects of oboe performance. Preparation of DMA recitals and Oral Defense. Preparation of audition repertoire for professional placement. An overview of pedagogy materials for performance and teaching use will also be explored.
PREREQUISITE: DOCTORAL LEVEL MIP OBO.

MIPOBQ Oboe
1-4 credits Fall & Spring Semester
Continue mastery of technical aspects of oboe performance. Preparation of DMA recitals and Oral Defense. Preparation of audition repertoire for professional placement. An overview of pedagogy materials for performance and teaching use will also be explored.
PREREQUISITE: DOCTORAL LEVEL MIP OBP.

MIPOBR Oboe
1-4 credits Fall & Spring Semester
Continue mastery of technical aspects of oboe performance. Preparation of DMA recitals and Oral Defense. Preparation of audition repertoire for professional placement. An overview of pedagogy materials for performance and teaching use will also be explored.
PREREQUISITE: DOCTORAL LEVEL MIP OBQ.

MIPPEI Percussion
1-4 credits Fall & Spring Semester
First semester of the Master's Degree in percussion performance. Emphasis on assessment of students' skills needs and repertoire experience. Materials covered to include standard solo and ensemble repertoire and technical work. First recital repertoire chosen from works supplementing students' needs.
PREREQUISITE: MASTER'S LEVEL MIP PEH.

MIPPEJ Percussion
1-4 credits Fall & Spring Semester
Second semester of the Masters Degree in percussion performance. The main area of focus is first recital; to be performed this semester. Exploration into solo and ensemble performance needs will continue through this semester.
PREREQUISITE: MASTER'S LEVEL MIP PEI.

MIPPEK Percussion
1-4 credits Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: MASTER'S LEVEL MIP PEJ.

MIPPEL Percussion
1-4 credits Fall & Spring Semester
Final semester of the Master's Degree in percussion performance. Main focus to be placed upon preparations for the final recital, which will be performed this semester.
PREREQUISITE: MASTER'S LEVEL MIP PEK.
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MIPPEM Percussion
1-4 credits Fall & Spring Semester
First of six semesters of study for a DMA in percussion performance. Students' needs assessed, and a course of study devised. Solo and ensemble works studied in-depth accordingly. Works for an initial and qualifying recital chosen.
PREREQUISITE: DOCTORAL LEVEL. MIP PEL

MIPPEN Percussion
1-4 credits Fall & Spring Semester
Second semester DMA. Main focus on initial and qualifying recitals, which are to be performed this semester. Ensemble and technical needs to be addressed.
PREREQUISITE: DOCTORAL LEVEL. MIP PEM

MIPPEO Percussion
1-4 credits Fall & Spring Semester
Third semester DMA. Repertoire for either solo or Chamber recital to be chosen.
PREREQUISITE: DOCTORAL LEVEL. MIP PEN

MIPPEP Percussion
1-4 credits Fall & Spring Semester
Fourth semester DMA. Either solo or chamber recital to be presented, as well as continuing ensemble studies.
PREREQUISITE: DOCTORAL LEVEL. MIP PEO

MIPPEQ Percussion
1-4 credits Fall & Spring Semester
Fifth semester DMA. Repertoire for final recital will be the focus of the semester. Ensemble work to continue, as well as pedagogical studies.
PREREQUISITE: DOCTORAL LEVEL. MIP PEP

MIPPER Percussion
1-4 credits Fall & Spring Semester
Final semester DMA. Final preparation and presentation of the final recital to be the main focus of the semester. Any remaining pedagogical and ensemble concerns are addressed.
PREREQUISITE: DOCTORAL LEVEL. MIP PEQ

MIPS Ak Saxophone
1-4 credits Fall & Spring Semester
Graduate level private study in classical saxophone is geared toward the individual's needs depending on the ability and skills mastered during the undergraduate level. The student will be required to seek refinement in all areas, including tone, intonation, technique, stylistic interpretation, and advanced forms of saxophone techniques. The student must be thoroughly versed in the pedagogy of the instrument. Study of advanced scales is required along with some jazz studies and advanced literature will be addressed in the private lesson format.
PREREQUISITE: MASTER'S LEVEL. MIP SAH.
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MIPSAJ Saxophone
1- 4 credits  Fall & Spring Semester
Graduate level private study in classical saxophone is geared toward the individual's needs depending on the ability and skills mastered during the undergraduate level. The student will be required to seek refinement in all areas, including tone, intonation, technique, stylistic interpretation, and advanced forms of saxophone techniques. The student must be thoroughly versed in the pedagogy of the instrument. Study of advanced scales is required along with some jazz studies and advanced literature will be addressed in the private lesson format.
PREREQUISITE: MASTER'S LEVEL. MIP SAI.

MIPSAK Saxophone
1- 4 credits  Fall & Spring Semester & First & Second Summer Session
Graduate level private study in classical saxophone is geared toward the individual's needs depending on the ability and skills mastered during the undergraduate level. The student will be required to seek refinement in all areas, including tone, intonation, technique, stylistic interpretation, and advanced forms of saxophone techniques. The student must be thoroughly versed in the pedagogy of the instrument. Study of advanced scales is required along with some jazz studies and advanced literature will be addressed in the private lesson format.
PREREQUISITE: MASTER'S LEVEL. MIP SAJ.

MIPSAL Saxophone
1- 4 credits  Fall & Spring Semester
Graduate level private study in classical saxophone is geared toward the individual's needs depending on the ability and skills mastered during the undergraduate level. The student will be required to seek refinement in all areas, including tone, intonation, technique, stylistic interpretation, and advanced forms of saxophone techniques. The student must be thoroughly versed in the pedagogy of the instrument. Study of advanced scales is required along with some jazz studies and advanced literature will be addressed in the private lesson format.
PREREQUISITE: MASTER'S LEVEL. MIP SAK.

MIPSAM Saxophone
1- 4 credits  Fall & Spring Semester
Graduate level private study in classical saxophone is geared toward the individual's needs depending on the ability and skills mastered during the undergraduate level. The student will be required to seek refinement in all areas, including tone, intonation, technique, stylistic interpretation, and advanced forms of saxophone techniques. The student must be thoroughly versed in the pedagogy of the instrument. Study of advanced scales is required along with some jazz studies and advanced literature will be addressed in the private lesson format.
PREREQUISITE: DOCTORAL LEVEL. MIP SAL.

MIPSAN Saxophone
1- 4 credits  Fall & Spring Semester
Graduate level private study in classical saxophone is geared toward the individual's needs depending on the ability and skills mastered during the undergraduate level. The student will be required to seek refinement in all areas, including tone, intonation, technique, stylistic interpretation, and advanced forms of saxophone techniques. The student must be thoroughly versed in the pedagogy of the instrument. Study of advanced scales is required along with some jazz studies and advanced literature will be addressed in the private lesson format.
PREREQUISITE: DOCTORAL LEVEL. MIP SAM.
MIPSAO Saxophone
1- 4 credits    Fall & Spring Semester
Graduate level private study in classical saxophone is geared toward the individual's needs depending on the ability and skills mastered during the undergraduate level. The student will be required to seek refinement in all areas, including tone, intonation, technique, stylistic interpretation, and advanced forms of saxophone techniques. The student must be thoroughly versed in the pedagogy of the instrument. Study of advanced scales is required along with some jazz studies and advanced literature will be addressed in the private lesson format.
PREREQUISITE: DOCTORAL LEVEL. MIP SAN.

MIPSAP Saxophone
1- 4 credits    Fall & Spring Semester
Graduate level private study in classical saxophone is geared toward the individual's needs depending on the ability and skills mastered during the undergraduate level. The student will be required to seek refinement in all areas, including tone, intonation, technique, stylistic interpretation, and advanced forms of saxophone techniques. The student must be thoroughly versed in the pedagogy of the instrument. Study of advanced scales is required along with some jazz studies and advanced literature will be addressed in the private lesson format.
PREREQUISITE: DOCTORAL LEVEL. MIP SAO.

MIPSAQ Saxophone
1- 4 credits    Fall & Spring Semester
Graduate level private study in classical saxophone is geared toward the individual's needs depending on the ability and skills mastered during the undergraduate level. The student will be required to seek refinement in all areas, including tone, intonation, technique, stylistic interpretation, and advanced forms of saxophone techniques. The student must be thoroughly versed in the pedagogy of the instrument. Study of advanced scales is required along with some jazz studies and advanced literature will be addressed in the private lesson format.
PREREQUISITE: DOCTORAL LEVEL. MIP SAP.

MIPSAR Saxophone
1- 4 credits    Fall & Spring Semester
Graduate level private study in classical saxophone is geared toward the individual's needs depending on the ability and skills mastered during the undergraduate level. The student will be required to seek refinement in all areas, including tone, intonation, technique, stylistic interpretation, and advanced forms of saxophone techniques. The student must be thoroughly versed in the pedagogy of the instrument. Study of advanced scales is required along with some jazz studies and advanced literature will be addressed in the private lesson format.
PREREQUISITE: DOCTORAL LEVEL. MIP SAQ.

MIPTBI Trombone
1- 4 credits    Fall & Spring Semester
Advanced progressive study is chosen from the following etude books, Gabriel Masson 12 Various Etudes, Marcel Bitsch 15 Rhythmical Studies, Roger Bountry 12 Etudes for High Perfection, and Brade Edwards Lip-slurs-Exercises for Tone and Technique. Additionally, solo concerto literature and contemporary works are studied and prepared to advance the student's technical and musical mastery of the trombone. Orchestral excerpts are studied to further develop and refine an appropriate sense of orchestral style.
PREREQUISITE: MASTER'S LEVEL. MIP TBH.
**MIPTBJ Trombone**

1-4 credits    Fall & Spring Semester

Advanced progressive study is chosen from the following etude books, Gabriel Masson 12 Various Etudes, Marcel Bitsch 15 Rhythmical Studies, Roger Bountry 12 Etudes for High Perfection, and Brade Edwards Lip-slurs-Exercises for Tone and Technique. Additionally, solo concerto literature and contemporary works are studied and prepared to advance the student's technical and musical mastery of the trombone. Orchestral excerpts are studied to further develop and refine an appropriate sense of orchestral style.

PREREQUISITE: MASTER'S LEVEL. MIP TBJ.

**MIPTBK Trombone**

1-4 credits    Fall & Spring Semester & First & Second Summer Session

Advanced progressive study is chosen from the following etude books, Gabriel Masson 12 Various Etudes, Marcel Bitsch 15 Rhythmical Studies, Roger Bountry 12 Etudes for High Perfection, and Brade Edwards Lip-slurs-Exercises for Tone and Technique. Additionally, solo concerto literature and contemporary works are studied and prepared to advance the student's technical and musical mastery of the trombone. Orchestral excerpts are studied to further develop and refine an appropriate sense of orchestral style.

PREREQUISITE: MASTER'S LEVEL. MIP TBJ.

**MIPTBL Trombone**

1-4 credits    Fall & Spring Semester

Advanced progressive study is chosen from the following etude books, Gabriel Masson 12 Various Etudes, Marcel Bitsch 15 Rhythmical Studies, Roger Bountry 12 Etudes for High Perfection, and Brade Edwards Lip-slurs-Exercises for Tone and Technique. Additionally, solo concerto literature and contemporary works are studied and prepared to advance the student's technical and musical mastery of the trombone. Orchestral excerpts are studied to further develop and refine an appropriate sense of orchestral style.

PREREQUISITE: MASTER'S LEVEL. MIP TBJ.

**MIPTBM Trombone**

1-4 credits    Fall & Spring Semester

Advanced progressive study is chosen from the following etude books, Gabriel Masson 12 Various Etudes, Marcel Bitsch 15 Rhythmical Studies, Roger Bountry 12 Etudes for High Perfection, and Brade Edwards Lip-slurs-Exercises for Tone and Technique. Additionally, solo concerto literature and contemporary works are studied and prepared to advance the student's technical and musical mastery of the trombone. Orchestral excerpts are studied to further develop and refine an appropriate sense of orchestral style.

PREREQUISITE: DOCTORAL LEVEL. MIP TBJ.

**MIPTBN Trombone**

1-4 credits    Fall & Spring Semester

Advanced progressive study is chosen from the following etude books, Gabriel Masson 12 Various Etudes, Marcel Bitsch 15 Rhythmical Studies, Roger Bountry 12 Etudes for High Perfection, and Brade Edwards Lip-slurs-Exercises for Tone and Technique. Additionally, solo concerto literature and contemporary works are studied and prepared to advance the student's technical and musical mastery of the trombone. Orchestral excerpts are studied to further develop and refine an appropriate sense of orchestral style.

PREREQUISITE: DOCTORAL LEVEL. MIP TBJ.
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MIPTBO Trombone
1-4 credits    Fall & Spring Semester
Advanced progressive study is chosen from the following etude books, Gabriel Masson 12 Various Etudes, Marcel Bitsch 15 Rhythmical Studies, Roger Bountry 12 Etudes for High Perfection, and Brade Edwards Lip-slurs-Exercises for Tone and Technique. Additionally, solo concerto literature and contemporary works are studied and prepared to advance the student's technical and musical mastery of the trombone. Orchestral excerpts are studied to further develop and refine an appropriate sense of orchestral style.
PREREQUISITE: DOCTORAL LEVEL. MIP TBN.

MIPTBP Trombone
1-4 credits    Fall & Spring Semester
Advanced progressive study is chosen from the following etude books, Gabriel Masson 12 Various Etudes, Marcel Bitsch 15 Rhythmical Studies, Roger Bountry 12 Etudes for High Perfection, and Brade Edwards Lip-slurs-Exercises for Tone and Technique. Additionally, solo concerto literature and contemporary works are studied and prepared to advance the student's technical and musical mastery of the trombone. Orchestral excerpts are studied to further develop and refine an appropriate sense of orchestral style.
PREREQUISITE: DOCTORAL LEVEL. MIP TBO.

MIPTBQ Trombone
1-4 credits    Fall & Spring Semester
Advanced progressive study is chosen from the following etude books, Gabriel Masson 12 Various Etudes, Marcel Bitsch 15 Rhythmical Studies, Roger Bountry 12 Etudes for High Perfection, and Brade Edwards Lip-slurs-Exercises for Tone and Technique. Additionally, solo concerto literature and contemporary works are studied and prepared to advance the student's technical and musical mastery of the trombone. Orchestral excerpts are studied to further develop and refine an appropriate sense of orchestral style.
PREREQUISITE: DOCTORAL LEVEL. MIP TBP.

MIPTBR Trombone
1-4 credits    Fall & Spring Semester
Advanced progressive study is chosen from the following etude books, Gabriel Masson 12 Various Etudes, Marcel Bitsch 15 Rhythmical Studies, Roger Bountry 12 Etudes for High Perfection, and Brade Edwards Lip-slurs-Exercises for Tone and Technique. Additionally, solo concerto literature and contemporary works are studied and prepared to advance the student's technical and musical mastery of the trombone. Orchestral excerpts are studied to further develop and refine an appropriate sense of orchestral style.
PREREQUISITE: DOCTORAL LEVEL. MIP TBQ.

MIPTPI Trumpet
1-4 credits    Fall & Spring Semester
PREREQUISITE: MASTER'S LEVEL. MIP TPIH.

MIPTPJ Trumpet
1-4 credits    Fall & Spring Semester
PREREQUISITE: MASTER'S LEVEL. MIP TPI.

MIPTPK Trumpet
1-4 credits    Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: MASTER'S LEVEL. MIP TPJ.
MIPTPL Trumpet
1- 4 credits    Fall & Spring Semester
PREREQUISITE: MASTER'S LEVEL. MIP TPK

MIPTPM Trumpet
1- 4 credits    Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP TPL.

MIPTPN Trumpet
1- 4 credits    Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP TPM.

MIPTPO Trumpet
1- 4 credits    Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP TPN.

MIPTPP Trumpet
1- 4 credits    Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP TPO.

MIPTPQ Trumpet
1- 4 credits    Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP TPP.

MIPTPR Trumpet
1- 4 credits    Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP TPQ.

MIPTUI Tuba
1- 4 credits    Fall & Spring Semester
Private lessons that focus on development of embouchure, breathing, and articulation, with emphasis on orchestral excerpts on Alphonse, Sear, Kraft, Kelleway, and others. PREREQUISITE: MASTER'S LEVEL. MIP TUH.

MIPTUJ Tuba
1- 4 credits    Fall & Spring Semester
Private lessons that focus on development of embouchure, breathing, and articulation, with emphasis on orchestral excerpts on Alphonse, Sear, Kraft, Kelleway, and others. PREREQUISITE: MASTER'S LEVEL. MIP TUI.

MIPTUK Tuba
1- 4 credits    Fall & Spring Semester & First & Second Summer Session
Private lessons that focus on development of embouchure, breathing, and articulation, with emphasis on orchestral excerpts on Alphonse, Sear, Kraft, Kelleway, and others. PREREQUISITE: MASTER'S LEVEL. MIP TUJ.

MIPTUL Tuba
1- 4 credits    Fall & Spring Semester
Private lessons that focus on development of embouchure, breathing, and articulation, with emphasis on orchestral excerpts on Alphonse, Sear, Kraft, Kelleway, and others. PREREQUISITE: MASTER'S LEVEL. MIP TUK.
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MIPTUM Tuba
1-4 credits    Fall & Spring Semester
Private lessons that focus on development of embouchure, breathing, and articulation, with emphasis on orchestral excerpts on Cinema, Snedecor, Wilder, Gould and others.
PREREQUISITE: DOCTORAL LEVEL. MIP TUL

MIPTUN Tuba
1-4 credits    Fall & Spring Semester
Private lessons that focus on development of embouchure, breathing, and articulation, with emphasis on orchestral excerpts on Cinema, Snedecor, Wilder, Gould and others.
PREREQUISITE: DOCTORAL LEVEL. MIP TUN

MIPTUO Tuba
1-4 credits    Fall & Spring Semester
Private lessons that focus on development of embouchure, breathing, and articulation, with emphasis on orchestral excerpts on Cinema, Snedecor, Wilder, Gould and others.
PREREQUISITE: DOCTORAL LEVEL. MIP TUN

MIPTUP Tuba
1-4 credits    Fall & Spring Semester
Private lessons that focus on development of embouchure, breathing, and articulation, with emphasis on orchestral excerpts on Cinema, Snedecor, Wilder, Gould and others.
PREREQUISITE: DOCTORAL LEVEL. MIP TUN

MIPTUQ Tuba
1-4 credits    Fall & Spring Semester
Private lessons that focus on development of embouchure, breathing, and articulation, with emphasis on orchestral excerpts on Cinema, Snedecor, Wilder, Gould and others.
PREREQUISITE: DOCTORAL LEVEL. MIP TUQ

MIPTUR Tuba
1-4 credits    Fall & Spring Semester
Private lessons that focus on development of embouchure, breathing, and articulation, with emphasis on orchestral excerpts on Cinema, Snedecor, Wilder, Gould and others.
PREREQUISITE: DOCTORAL LEVEL. MIP TUQ

MIPVAI Viola
1-4 credits    Fall & Spring Semester
Mastery of technical aspects of viola performance. Preparation of Masters recital(s) and oral defense. Preparation of repertoire for audition for further study or professional placement.
PREREQUISITE: MASTER'S LEVEL. MIP VAH

MIPVAJ Viola
1-4 credits    Fall & Spring Semester
Mastery of technical aspects of viola performance. Preparation of Masters recital(s) and oral defense. Preparation of repertoire for audition for further study or professional placement.
PREREQUISITE: MASTER'S LEVEL. MIP VAI
MIPVAK Viola
1- 4 credits  Fall & Spring Semester & First & Second Summer Session
Mastery of technical aspects of viola performance. Preparation of Masters recital(s) and oral defense. Preparation of repertoire for audition for further study or professional placement.
PREREQUISITE: MASTER'S LEVEL MIP VAJ.

MIPVAL Viola
1- 4 credits  Fall & Spring Semester
Mastery of technical aspects of viola performance. Preparation of Masters recital(s) and oral defense. Preparation of repertoire for audition for further study or professional placement.
PREREQUISITE: MASTER'S LEVEL MIP VAK.

MIPVAM Viola
1- 4 credits  Fall & Spring Semester
Continued mastery of technical aspects of viola performance. Preparation of qualifying recital and DMA recitals and oral defense. Preparation of repertoire for audition for further study or professional placement.
PREREQUISITE: DOCTORAL LEVEL MIP VAL.

MIPVAN Viola
1- 4 credits  Fall & Spring Semester
Continued mastery of technical aspects of viola performance. Preparation of qualifying recital and DMA recitals and oral defense. Preparation of repertoire for audition for further study or professional placement.
PREREQUISITE: DOCTORAL LEVEL MIP VAM.

MIPVAO Viola
1- 4 credits  Fall & Spring Semester
Continued mastery of technical aspects of viola performance. Preparation of qualifying recital and DMA recitals and oral defense. Preparation of repertoire for audition for further study or professional placement.
PREREQUISITE: DOCTORAL LEVEL MIP VAN.

MIPVAP Viola
1- 4 credits  Fall & Spring Semester
Continued mastery of technical aspects of viola performance. Preparation of qualifying recital and DMA recitals and oral defense. Preparation of repertoire for audition for further study or professional placement.
PREREQUISITE: DOCTORAL LEVEL MIP VAO.

MIPVAQ Viola
1- 4 credits  Fall & Spring Semester
Continued mastery of technical aspects of viola performance. Preparation of qualifying recital and DMA recitals and oral defense. Preparation of repertoire for audition for further study or professional placement.
PREREQUISITE: DOCTORAL LEVEL MIP VAP.

MIPVAR Viola
1- 4 credits  Fall & Spring Semester
Continued mastery of technical aspects of viola performance. Preparation of qualifying recital and DMA recitals and oral defense. Preparation of repertoire for audition for further study or professional placement.
PREREQUISITE: DOCTORAL LEVEL MIP VAQ.
MIPVCI Violoncello
  1-4 credits    Fall & Spring Semester
  PREREQUISITE: MASTER'S LEVEL. MIPVCH.

MIPV CJ Violoncello
  1-4 credits    Fall & Spring Semester
  PREREQUISITE: MASTER'S LEVEL. MIPVCI.

MIPVCK Violoncello
  1-4 credits    Fall & Spring Semester & First & Second Summer Session
  PREREQUISITE: MASTER'S LEVEL. MIPVCK.

MIPVCL Violoncello
  1-4 credits    Fall & Spring Semester
  PREREQUISITE: MASTER'S LEVEL. MIPVCL.

MIPVCM Violoncello
  1-4 credits    Fall & Spring Semester
  PREREQUISITE: DOCTORAL LEVEL. MIPVCM.

MIPVCN Violoncello
  1-4 credits    Fall & Spring Semester
  PREREQUISITE: DOCTORAL LEVEL. MIPVCN.

MIPVCO Violoncello
  1-4 credits    Fall & Spring Semester
  PREREQUISITE: DOCTORAL LEVEL. MIPVCO.

MIPVCQ Violoncello
  1-4 credits    Fall & Spring Semester
  PREREQUISITE: DOCTORAL LEVEL. MIPVCQ.

MIPVCR Violoncello
  1-4 credits    Fall & Spring Semester
  PREREQUISITE: DOCTORAL LEVEL. MIPVCR.

MIPVNI Violin
  1-4 credits    Fall & Spring Semester
  Graduate Level.
  PREREQUISITE: MASTER'S LEVEL. MIPVNI.

MIPVNJ Violin
  1-4 credits    Fall & Spring Semester
  PREREQUISITE: MASTER'S LEVEL. MIPVNI.

MIPVN K Violin
  1-4 credits    Fall & Spring Semester & First & Second Summer Session
  PREREQUISITE: MASTER'S LEVEL. MIPVNK.
MIPVNL Violin
1-4 credits Fall & Spring Semester
PREREQUISITE: MASTER'S LEVEL. MIP VNK

MIPVNM Violin
1-4 credits Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP VNL.

MIPVNN Violin
1-4 credits Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP VNM.

MIPVNO Violin
1-4 credits Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP VNN.

MIPVNP Violin
1-4 credits Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP VNO.

MIPVNQ Violin
1-4 credits Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP VNP.

MIPVNR Violin
1-4 credits Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MIP VNQ.

MIP539 Brass Chamber Music Institute
2 credits Offered By Announcement Only
Institute offers opportunities for brass players to perform in all forms of chamber music--from trios to Brass Choir. Included are master classes on each instrument plus the availability of private instruction from an excellent faculty. The material covered spans the musical periods including recent brass publications.

MIP541 Bassoon Repertoire and Pedagogy
1-2 credits Fall Semester
Solo and small ensemble literature of the bassoon since 1600.
PREREQUISITE: ADVANCED STANDING IN MUSIC AND PERMISSION OF INSTRUCTOR.

MIP542 Clarinet Repertoire and Pedagogy
1-2 credits Fall Semester
Solo and small ensemble literature of the clarinet since 1600.
PREREQUISITE: ADVANCED STANDING IN MUSIC AND PERMISSION OF INSTRUCTOR.

MIP543 Flute Repertoire and Pedagogy
1-2 credits Fall Semester
Solo and small ensemble literature of the flute since 1600.
PREREQUISITE: ADVANCED STANDING IN MUSIC AND PERMISSION OF INSTRUCTOR.

MIP544 Oboe Repertoire and Pedagogy
1-2 credits Fall Semester
Solo and small ensemble literature of the oboe since 1600.
PREREQUISITE: ADVANCED STANDING IN MUSIC AND PERMISSION OF INSTRUCTOR.
SCHOOL OF MUSIC
INSTRUMENTAL PERFORMANCE

MIP545 Brass Repertoire and Pedagogy
1-2 credits Spring Semester
Solo and small ensemble literature of brass instruments since 1600.
PREREQUISITE: ADVANCED STANDING IN MUSIC AND PERMISSION OF INSTRUCTOR.

MIP546 Percussion Repertoire and Pedagogy
1-2 credits Spring Semester
Solo and small ensemble literature of percussion instruments since 1600.
PREREQUISITE: ADVANCED STANDING IN MUSIC AND PERMISSION OF INSTRUCTOR.

MIP547 Saxophone Repertoire and Pedagogy
1-2 credits Fall Semester
Solo and small ensemble literature of the saxophone since 1600.
PREREQUISITE: ADVANCED STANDING IN MUSIC AND PERMISSION OF INSTRUCTOR.

MIP548 Guitar Repertoire and Pedagogy
1-2 credits Fall Semester
Solo and small ensemble literature of the guitar since 1600.
PREREQUISITE: ADVANCED STANDING IN MUSIC AND PERMISSION OF INSTRUCTOR.

MIP549 String Repertoire and Pedagogy
1-2 credits Fall Semester
An exploration of teaching string playing. Areas covered include problem-solving and communication techniques, and practical considerations in establishing a teaching studio. Students participate in hands-on teaching opportunities. Prerequisite: Advanced standing in Music and permission of instructor.
PREREQUISITE: ADVANCED STANDING IN MUSIC AND PERMISSION OF INSTRUCTOR.

MIP550 Bach Cello Suites
1 credit Spring Semester
The study and performance of the six suites for unaccompanied cello of Johann Sebastian Bach.

MIP580 Orchestral Audition Preparation
1 credit Fall & Spring Semester
The study of the more difficult excerpts from the orchestral literature for violin, viola, violoncello, or double bass. Course may be repeated for credit.

MIP593 Special Topics MIP
1-3 credits Fall & Spring Semester & First & Second Summer Session
Supervised topics and other activities in specific areas of Instrumental Performance.
PREREQUISITE: PERMISSION OF THE DEAN.

MIP601 MM Recital Program Notes Preparation
1 credit Fall Semester
Students prepare extensive, original program notes, with bibliography. These notes will be made available to the audience of the second Masters recital. The notes may focus on the historical, analytical and performance aspects of the repertoire for this recital. Required in MM two-recital degree programs.
PREREQUISITE: ENROLLMENT IN THE FROST SCHOOL OF MUSIC AS A MASTERS CANDIDATE IN INSTRUMENTAL PERFORMANCE IN THE "TWO RECITAL/PROGRAM NOTES" TRACK.
MIP610 Graduate Conducting Seminar
1-2 credits  Fall & Spring Semester
The graduate conducting seminar is an advanced study of conducting and rehearsal techniques combined with score and ensemble topics. Specific topics vary each semester. May be repeated for credit.

MIP630 Afro-Caribbean Hand Drumming, Level I
1 credit  Fall & Spring Semester
The study of hand drumming techniques used to perform the music of Africa and the new world African music that originated in the islands of the Caribbean and the countries of Central and Latin America. Class is taught as a workshop.

MIP631 Afro-Caribbean Hand Drumming, Level II
1 credit  Fall & Spring Semester
The study of hand drumming techniques used to perform the music of Africa and the new world African music that originated in the islands of the Caribbean and the countries of Central and Latin America. Level II is a performance ensemble. PREREQUISITE: MIP 630 OR AUDITION.

MIP634 Steel Band/Trinidad
1 credit  Offered By Announcement Only
Steel Band/Trinidad reflects the broad musical heritage of the West Indies. Steel Drums (Pans) are combined with other indigenous instruments in the performance of both folk music and transcriptions of standard classical repertory in the tradition of the Trinidad carnival celebration. Level one of this class is taught as a workshop, level two as a performance ensemble. is taught as a performance ensemble.

MIP635 Percussion Contemporary Chamber Music
1 credit  Fall & Spring Semester
Mandatory for all classical percussionists, this course focuses on the contemporary unconducted chamber music repertoire. The goal is for students to develop and use an advanced listening/communicating skill set, while playing music with others. This course also targets to improve students' capabilities in contemporary music interpretation and performance. PREREQUISITE: PERCUSSION MAJORS; OR NON-PERCUSSION MAJORS BY PERMISSION OF THE PERCUSSION PROGRAM DIRECTOR.

MIP638 Trombone Choir
1 credit  Fall & Spring Semester
The study and performance of literature for small and large trombone ensembles. PREREQUISITE: BY AUDITION.

MIP639 Brass Chamber Music
1 credit  Fall & Spring Semester
The study and performance of literature for small ensembles of similar or mixed brass instruments. PREREQUISITE: BY AUDITION.

MIP640 Flute Choir
1 credit  Fall & Spring Semester
Reading, rehearsing, and performing the flute choir repertoire (duets, trios, quartets, quintets). PREREQUISITE: BY AUDITION.
MIP641 Saxophone Ensemble  
1 credit  
Fall & Spring Semester  
The study and performance of classical and jazz literature for small saxophone ensembles.  
PREREQUISITE: BY AUDITION.

MIP643 Woodwind Chamber Music  
1 credit  
Fall & Spring Semester  
Exploring the woodwind chamber music repertoire as represented by various combinations of instruments.  
PREREQUISITE: BY AUDITION.

MIP644 Woodwind Chamber Ensemble  
1 credit  
Fall & Spring Semester  
Woodwind chamber ensemble is designed to give students knowledge of the most important literature for woodwinds through practice, rehearsal, and performance of major works for woodwind chamber ensemble.  
PREREQUISITE: BY AUDITION.

MIP645 String-Keyboard Chamber Music  
1 credit  
Fall & Spring Semester  
The study and performance of literature from the Baroque Period through the 20th Century for two or more players for string instrumentalists and strings with keyboard.  
PREREQUISITE: BY AUDITION.

MIP655 Seminar in Baroque Performance  
1 credit  
Fall Semester  
Students will present research on compositions representative of the Baroque period. Presentations will include interpretation, style, and historical context of both the composer and the work.  
PREREQUISITE: DOCTORAL STANDING AND PERMISSION OF THE INSTRUCTOR.

MIP656 Seminar in Classical Performance  
1 credit  
Spring Semester  
Students will present research on compositions representative of the classical period. Presentations will include interpretation, style, and historical context of both the composer and the work.  
PREREQUISITE: DOCTORAL STANDING AND PERMISSION OF THE INSTRUCTOR.

MIP657 Seminar in Romantic Performance  
1 credit  
Fall Semester  
Students will present research on compositions representative of the Romantic period. Presentations will include interpretation, style, and historical context of both the composer and the work.  
PREREQUISITE: DOCTORAL STANDING AND PERMISSION OF THE INSTRUCTOR.

MIP658 Seminar in Contemporary Performance  
1 credit  
Spring Semester  
Students will present research on compositions representative of the Contemporary music. Presentations will include interpretation, style, and historical context of both the composer and the work.  
PREREQUISITE: DOCTORAL STANDING AND PERMISSION OF THE INSTRUCTOR.
MIP670 Marching Band  
1 credit  Fall Semester  
The "Band of the Hour" Marching Band is open to all qualified undergraduate and graduate students, regardless of major. The band performs at all home Miami Hurricane football games and selected away games.  
PREREQUISITE: AUDITION.

MIP671 Symphonic Winds  
1 credit  Fall & Spring Semester  
Symphonic Band is a large wind band that performs significant repertoire for wind and percussion instruments. It is open to all qualified undergraduate and graduate students, regardless of major.  
PREREQUISITE: AUDITION.

MIP674 Brass Choir  
1 credit  Fall & Spring Semester  
Major works for Brass Choir are studied. Special emphasis is given to orchestral repertoire.  
PREREQUISITE: BY AUDITION.

MIP676 Wind Ensemble  
1 credit  Fall & Spring Semester  
This course offers performance opportunities for qualified wind and percussion players. Repertoire includes significant literature written for the small and large wind band.  
PREREQUISITE: AUDITION.

MIP680 Symphony Orchestra  
1 credit  Fall & Spring Semester  
The Symphony Orchestra performs significant repertoire for large orchestra. It is open to all qualified graduate students by audition.  
PREREQUISITE: BY AUDITION.

MIP681 Instrumental Conducting Workshop  
1 credit  Fall & Spring Semester  
This course provides practical procedures and materials for beginning and advancing conducting students. Students enrolled in the four-semester sequence demonstrate basic conducting techniques, demonstration of instruments and instrumentation of the wind band and orchestra, and analyze scores for conception, interpretations, rehearsal, and performance.  
PREREQUISITE: MTC 112 AND 122.

MIP682 Instrumental Conducting II  
1 credit  Spring Semester  
This course provides practical procedures and materials for advancing instrumental conducting students. Students demonstrate refined skill in conducting musical styles and independence of gestures.  
PREREQUISITE: MIP 681

MIP691 Tuba Ensemble  
1 credit  Fall & Spring Semester  
The study and performance of compositions and/or transcriptions written for an ensemble of tubas and/or euphoniums.  
PREREQUISITE: BY AUDITION.
MIP692 Classical Guitar Ensemble

1 credit  Fall & Spring Semester
This course focuses on sight-reading, rhythm recognition, and ensemble performance through the study of exercise, scales, and diverse repertoire.
PREREQUISITE: BY AUDITION.

MIP693 Special Projects

1-3 credits  Fall & Spring Semester & First & Second Summer Session
Projects in any phase of instrumental performance in which the student is interested and qualified to work.
PREREQUISITE: GRADUATE MUSIC STUDENTS ONLY. DEAN'S APPROVAL AND SIGNATURE REQUIRED.

MIP694 Special Projects

1-3 credits  Fall & Spring Semester & First & Second Summer Session
Projects in any phase of instrumental performance in which the student is interested and qualified to work.
PREREQUISITE: GRADUATE MUSIC STUDENTS ONLY. DEAN'S APPROVAL AND SIGNATURE REQUIRED.

MIP699 Contemporary Music Ensemble

1 credit  Fall & Spring Semester
An in-depth study and performance of new and standard classical music of the 20th century.

MIP711 Master's Recital Paper

1-3 credits  Fall & Spring Semester & First & Second Summer Session
The student working on his/her master's recital paper enrolls for credit as determined by his/her advisor. Credit is not awarded until the paper has been accepted.

MIP712 Master's Recital

1 credit  Fall & Spring Semester
The student enrolls for recital credit during the semester in which he/she presents the master's recital.

MIP713 Master's Advanced Recital

2 credits  Fall & Spring Semester
The second recital for those taking the two-recital option in the Master of Music in Instrumental Performance degree.
PREREQUISITE: MIP 712

MIP720 Research in Residence

0 credit  Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in MIP 710 (usually six credits). Credit not granted. May be regarded as full time residence.

MIP731 Doctoral Essay

1-12 credits  Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the D.M.A. The student will enroll for credit as determined by his/her advisor, but not for less than a total of 12. Not more than 12 hours of MIP 731 may be taken in a regular semester, nor more than six in a summer session.

MIP732 Doctoral Recital

1-2 credits  Fall & Spring Semester
Required of all candidates for the D.M.A.
MIP750 Research in Residence
0 credit    Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D. and D.M.A., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

KEYBOARD PERFORMANCE
MKPHCI Harpsichord
1- 4 credits    Fall & Spring Semester
PREREQUISITE: MASTER'S LEVEL. BY AUDITION

MKPHCJ Harpsichord
1- 4 credits    Fall & Spring Semester
PREREQUISITE: MASTER'S LEVEL. MKP HCI.

MKPHCK Harpsichord
1- 4 credits    Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: MASTER'S LEVEL. MKP HCJ.

MKPHCL Harpsichord
1- 4 credits    Fall & Spring Semester
PREREQUISITE: MASTER'S LEVEL. MKP HCK.

MKPHCM Harpsichord
1- 4 credits    Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. BY AUDITION.

MKPHCN Harpsichord
1- 4 credits    Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MKP HCM.

MKPHCO Harpsichord
1- 4 credits    Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MKP HCN.

MKPHCP Harpsichord
1- 4 credits    Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MKP HCO.

MKPHCQ Harpsichord
1- 4 credits    Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MKP HCQ.

MKPORI Organ
1- 4 credits    Fall & Spring Semester
PREREQUISITE: MASTER'S LEVEL. BY AUDITION.

MKPORJ Organ
1- 4 credits    Fall & Spring Semester
PREREQUISITE: MASTER'S LEVEL. MKP ORI.
MKPORK Organ
1-4 credits Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: MASTER'S LEVEL. MKP ORJ.

MKPORL Organ
1-4 credits Fall & Spring Semester
PREREQUISITE: MASTER'S LEVEL. MKP ORK.

MKPORM Organ
1-4 credits Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. BY AUDITION.

MKPORN Organ
1-4 credits Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MKP ORM.

MKPORO Organ
1-4 credits Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MKP ORN.

MKPORP Organ
1-4 credits Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MKP ORO.

MKPORQ Organ
1-4 credits Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MKP ORQ.

MKPPII Piano
1-4 credits Fall & Spring Semester
PREREQUISITE: MASTER'S LEVEL. BY AUDITION.

MKPPIJ Piano
1-4 credits Fall & Spring Semester
PREREQUISITE: MASTER'S LEVEL. MKP PII.

MKPPIK Piano
1-4 credits Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: MASTER'S LEVEL. MKP PIJ.

MKPPIL Piano
1-4 credits Fall & Spring Semester
PREREQUISITE: MASTER'S LEVEL. MKP PIK.

MKPPIM Piano
1-4 credits Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. BY AUDITION.

MKPPIP Piano
1-4 credits Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MKP PIM.
SCHOOL OF MUSIC
KEYBOARD PERFORMANCE

MKPPIO Piano
1- 4 credits    Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MKP PIO.

MKPPIP Piano
1- 4 credits    Fall & Spring Semester
Prerequisite: Doctoral level.
PREREQUISITE: DOCTORAL LEVEL. MKP PIO.

MKPPIQ Piano
1- 4 credits    Fall Semester
PREREQUISITE: DOCTORAL LEVEL. MKP PIP.

MKPPIR Piano
1- 4 credits    Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MKP PIQ.

MKP547 Keyboard Pedagogy
3 credits                                                             Fall Semester
Methods and materials for teaching keyboard instruments with a focus on private lesson instruction. Topics include teacher profile, general teaching considerations, the business of teaching, the beginning student, second- and third-year students, teaching materials, and an introduction to new technology in piano teaching.

MKP548 Intermediate to Advanced Repertoire
3 credits                                                           Spring Semester
PREREQUISITE: PIANO MAJORS AT OR ABOVE JUNIOR-STANDING OR PERMISSION OF INSTRUCTOR

MKP549 Keyboard Pedagogy II:Keyboard Pedagogy Diagnostics
3 credits                                                             Fall Semester
PREREQUISITE: PIANO MAJORS AT OR ABOVE JUNIOR-STANDING OR PERMISSION OF INSTRUCTOR

MKP550 Keyboard Pedagogy III: Practice Strategies
3 credits                                                             Fall & Spring Semester
PREREQUISITE: PIANO MAJORS AT OR ABOVE JUNIOR-STANDING OR PERMISSION OF INSTRUCTOR

MKP589 Keyboard Accompanying Program in Salzburg, Austria
2- 4 credits    Spring Semester
Course is conducted at Salzburg College, Austria. Students receive comprehensive and intensive coaching in piano and accompanying from Dr. Posnak and other internationally acclaimed guest artists. Piano students study piano (2 cr.) and accompanying (1 cr.).
PREREQUISITE: BY AUDITION ONLY.

MKP593 Special Topics MKP
1- 3 credits    Fall & Spring Semester & First & Second Summer Session
Supervised topics and other activities in specific areas of Keyboard Performance.
PREREQUISITE: PERMISSION OF THE DEAN
MKP610 Seminar in Baroque Performance  
1 credit  Fall Semester  
This course is designed as a performance class for graduate DMA piano majors. Class members will be responsible for presentation of major compositions representative of the period. Research will be required for each presentation concentrating on interpretation, stylistic requirements of the period and the historical context of the composers and work.  
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

MKP611 Seminar in Classical Performance  
1 credit  Spring Semester  
This course is designed as a performance class for graduate piano majors. Class members will be responsible for presentation of major compositions representative of the period. Research will be required for each presentation concentrating on interpretation, stylistic requirements of the period and the historical context of the composers and work.  
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

MKP612 Seminar in Romantic Performance  
1 credit  Fall Semester  
This course is designed as a performance class for graduate piano majors. Class members will be responsible for presentation of major compositions representative of the period. Research will be required for each presentation concentrating on interpretation, stylistic requirements of the period and the historical context of the composers and work.  
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

MKP613 Seminar in Contemporary Music  
1 credit  Spring Semester  
This course is designed as a performance class for graduate piano majors. Class members will be responsible for presentation of major compositions representative of the period. Research will be required for each presentation concentrating on interpretation, stylistic requirements of the period and the historical context of the composers and work.  
PREREQUISITE: PERMISSION OF THE INSTRUCTOR.

MKP647 Seminar in Keyboard Pedagogy  
3 credits  Fall Semester  
Methods and materials used in the teaching of keyboard instruments with a focus on group instruction. Topics include group lessons, preschool music, college piano classes, teaching literature, learning theories and applications, and the use of educational computer software in piano teaching.  
PREREQUISITE: PIANO MAJORS OR PERMISSION OF INSTRUCTOR.

MKP650 Keyboard Pedagogy Research Seminar  
1 credit  Fall & Spring Semester  
Important topics of current interest within the field of keyboard pedagogy. Course may be repeated for credit.  
PREREQUISITE: GRADUATE PIANO MAJORS ONLY.
MKP680 Keyboard Pedagogy Internship
1 credit
Fall & Spring Semester
The student team-teaches a piano class or a private student with the instructor. The instructor observes and critiques the student, and the student videotapes themselves and offers critiques of their own teaching.
PREREQUISITE: PIANO MAJORS OR PERMISSION OF INSTRUCTOR

MKP685 Musical Theatre Accompanying
1 credit
Fall & Spring Semester
A class designed to improve the skills of pianists with a particular interest in musical theatre piano accompaniment. Students will study in a classroom setting.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MKP686 Vocal Accompanying I
1 credit
Fall Semester
Pianists attend seminars where the principles of accompanying classical and musical theatre singers are addressed. Students are assigned to accompany applied voice lessons and ensembles.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MKP687 Vocal Accompanying II
1 credit
Fall & Spring Semester
Pianists attend seminars where the principles of accompanying classical and musical theatre singers are addressed. Students are assigned to accompany applied voice lessons and ensembles.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MKP688 Graduate Seminar in Accompanying
1 credit
Fall & Spring Semester
Study and performance of major vocal and chamber music literature as related to the accompanist and chamber musician. Course may be repeated for credit.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MKP689 Accompanying, Level I
1 credit
Fall & Spring Semester
Development of sight-reading skills and score preparation.
PREREQUISITE: AUDITION/PERMISSION OF INSTRUCTOR.

MKP690 Accompanying, Level II
1 credit
Fall & Spring Semester
Progressive development of individual vocal/instrumental and ensemble accompanying, sight-reading, score reading, and improvising from a lead sheet.
PREREQUISITE: MKP 689 OR PERMISSION OF INSTRUCTOR.

MKP691 Accompanying, Level III
1 credit
Fall & Spring Semester
Progressive development of all types of accompaniment skills including clef and score reading, transposition, possible recital, opera theater, choral ensemble, and/or orchestral accompanying.
PREREQUISITE: MKP 190/690 OR PERMISSION OF INSTRUCTOR.
MKP693 Special Projects
1-3 credits Fall & Spring Semester
Projects in any phase of keyboard performance in which the student is interested and qualified to work.
PREREQUISITE: GRADUATE MUSIC STUDENTS ONLY. DEAN'S APPROVAL AND SIGNATURE REQUIRED.

MKP694 Special Projects
1-3 credits Fall & Spring Semester
Projects in any phase of keyboard performance in which the student is interested and qualified to work.
PREREQUISITE: GRADUATE MUSIC STUDENTS ONLY. DEAN'S APPROVAL AND SIGNATURE REQUIRED.

MKP711 Master's Recital Paper
1-3 credits Fall & Spring Semester & First & Second Summer Session
The student working on his/her master's recital paper enrolls for credit as determined by his/her advisor. Credit is not awarded until the paper has been accepted.

MKP712 Master's Recital
1 credit Fall & Spring Semester
The student enrolls for recital credit during the semester in which he/she presents the master's recital.

MKP713 Master's Pedagogy Project
1-3 credits Fall & Spring Semester
The student working on his/her master's pedagogy project enrolls for credit as determined by his/her advisor. Credit is not awarded until the project paper is accepted.

MKP720 Research in Residence
0 credit Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in MKP 710 (usually six credits). Credit not granted. May be regarded as full-time residence.

MKP731 Doctoral Essay
1-12 credits Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the D.M.A. The student will enroll for credit as determined by his/her advisor, but not for less than a total of 12. Not more than 12 hours of MKP 731 may be taken in a regular semester, nor more than six in a summer session.

MKP732 Doctoral Recital
1-2 credits Fall & Spring Semester
Required of all candidates for the D.M.A.

MKP750 Research in Residence
0 credit Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D. and D.M.A., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.
MUSIC EDUCATION & THERAPY

MED541 Musical Instrument Maintenance
0 credits Fall & Spring Semester
Mechanical development, care, and maintenance of musical instruments. Separate sections for wind, percussion, string, and keyboard instruments.

MED542 Teaching Elementary General Music (K-5)
3 credits Fall Semester
Curriculum, methods, and materials designed for elementary music, K-6. Observation, planning, and teaching experience are emphasized. PREREQUISITE: JUNIOR STANDING IN MED PROGRAM

MED543 Teaching Elementary and Secondary Instrumental Music
3 credits Spring Semester
A study of elementary and secondary instrumental music instruction including program organization, teaching techniques, materials, and field experiences of music instruction in schools. PREREQUISITE: JUNIOR STANDING IN MED PROGRAM

MED544 Teaching Secondary General Music (7-12)
3 credits Spring Semester
Curriculum, methods, and materials designed for junior/senior high school general music programs. PREREQUISITE: JUNIOR STANDING IN MED PROGRAM

MED545 Music in Rehabilitation
3 credits Spring Semester
Review of development and functioning for neurologically-based sensorimotor behavior. Survey of disabilities and diseases that typically result in sensorimotor deficits is included. Demonstration and practice of therapeutic techniques for sensorimotor deficits are also covered.

MED546 Music Psychotherapy
3 credits Spring Semester
Survey and practical application of music as therapy in the treatment of psychiatric disorders and in promoting mental health.

MED548 Music for Special Learners
3 credits Spring Semester
This course is designed for music educators who will be working in schools with children and youth who have various disabilities. The purpose of MED 548 is to acquaint students with the characteristics of children and youth with disabilities, and introduce adaptive strategies in music education, K-12, for instructing children and youth with disabilities.

MED549 Teaching Secondary Choral Music
3 credits Fall Semester
Course covers curriculum, vocal/rehearsal techniques, and literature. Teaching music in secondary schools through the medium of choral performance. PREREQUISITE: JUNIOR STANDING IN MED PROGRAM

MED555 Elementary Music Workshop
3 credits First Summer Session
Course is designed for in-service elementary school classroom teachers and music supervisors. Survey and experience with contemporary methodology and materials in elementary school music education is emphasized.
MED556 Secondary General Music Workshop
3 credits  First Summer Session
Course is designed for teachers of general music classes in middle, junior high, and senior high schools. Practical experience with methods and materials designed for non-performance music classes, grades 7-12 is emphasized.

MED559 Internship in Music Therapy
3 credits  First & Second Summer Session
Course provides students with a six month opportunity as a music therapy intern in an approved training facility.
PREREQUISITE: COMPLETION OF ALL OTHER COURSEWORK REQUIREMENTS FOR MUSIC THERAPY CERTIFICATION.

MED560 Internship in Music Therapy II
0 credit  First & Second Summer Session
PREREQUISITE: MED 559

MED562 Psychology of Music I
3 credits  Spring Semester
Psychological foundations of music with an emphasis on problems of perception, experimental esthetics, functional music, and measurement and diagnosis of musical ability and achievement. Related literature of experimental investigation is reviewed.

MED575 Preschool Music Workshop
1-3 credits  Offered By Announcement Only
Workshop is designed to prepare class members to initiate, administer, and teach music programs for preschool children. Materials which address the teacher, the child, and the parent are used. The daily schedule includes demonstration classes with children, lectures, and active participation of and discussion with class members. Emphasis is placed on working with a planning guide for teachers which offers articles on the major areas of the curriculum and clear, succinct statements focusing on the central issues of each lesson.

MED576 Music and Development
3 credits  Fall Semester
Review of development in cognitive, communication, and musical domains. Survey of developmental disabilities most commonly found in child populations is included as well as demonstration and practice of therapeutic techniques for cognitive and communication deficits.

MED581 Teaching Classroom Guitar I
2 credits  First Summer Session
This class is designed for students and teachers, guitarist or non-guitarist, who wish to initiate, enhance, and teach guitar in a multi-level classroom setting. The course includes demonstration classes with elementary and secondary students. Topics include organization and teaching performance materials in a hands-on setting.

MED593 Special Topics MED
1-3 credits  Fall & Spring Semester & First & Second Summer Session
Supervised topics and other activities in specific areas of Music Education.
PREREQUISITE: DEAN'S APPROVAL AND SIGNATURE REQUIRED
MED600 Psychoacoustical Foundations of Music
2 credits Fall Semester
Production, transmission, and reception of simple and complex tones. Examination of physical properties and psychoacoustical response to tonal stimuli is also included.

MED601 Recital Paper Preparation
1 credit Fall & Spring Semester
Supervised preparation of the recital paper required for the Master of Music degree in classical performance.
PREREQUISITE: COMPLETION OF TWO FULL-TIME SEMESTERS IN THE MM PROGRAM IN PERFORMANCE.

MED602 DMA Essay Proposal
1 credit Spring Semester
Supervised preparation of the DMA proposal for the Doctor of Musical Arts in Performance, Conducting, or Accompanying and Chamber Music.
PREREQUISITE: COMPLETION OF 30 CREDITS TOWARD THE DMA.

MED610 Graduate Forum in Music Therapy
0 credit Offered By Announcement Only
Forum for graduate students to discuss topics relevant to advanced music therapy practice, engage in experiential therapeutic techniques, and to share student efforts of scholarship in the field.
PREREQUISITE: GRADUATE STANDING.

MED615 Graduate Forum
0 credit Offered By Announcement Only
Forum for masters and doctoral students to discuss various topics of relevance to music education practice and to share efforts of scholarship in the field.
PREREQUISITE: GRADUATE STANDING.

MED620 International Music Education
3 credits Spring Semester
Students study music instruction systems in other countries, including public and private school, community music programs, private music instruction, music conservatory instruction, informal instructional systems, and university work in music. Students compare music instruction systems in the United States and other countries through readings and presentations by native informants. An optional on-site field experience examining music education in another country may be arranged to coincide with this course.

MED629 Advanced Music Therapy Practice I
3 credits Spring Semester
Review of research literature in clinical topic areas, such as music and cognition, or music and affective processing. Presentation of research findings through writing and discussion is emphasized as well as the application of research findings through practice and demonstration of therapeutic techniques.

MED630 Advanced Music Therapy Practice II
3 credits Fall & Spring Semester
Review of research literature in clinical topic areas, such as music and sensorimotor processing or music in biofeedback. Presentation of research findings through writing and discussion is emphasized as well as the application of research findings through practice and demonstration of therapeutic techniques.
PREREQUISITE: MED 629.
MED632 Vocal Methods and Materials in Music Education
2 credits
Spring Semester
Survey of latest vocal methods and publications for use in public schools.

MED633 Seminar for Teaching Associates
1 credit
Fall & Spring Semester
Discussion of teaching, rehearsal techniques, and the organization of music materials related to the internship experience. To be taken in conjunction with internship, MED 771.
PREREQUISITE: ADMISSION TO TEACHER CANDIDACY

MED640 Woodwind Techniques
1 credit
Fall Semester & First & Second Summer Session
Group instruction in woodwind instruments with emphasis on basic skills of performance as well as the appropriate teaching techniques, methods, and materials necessary for public school pedagogy. Course may be repeated for credit.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MED641 Brass Techniques
1 credit
Offered By Announcement Only
Group instruction in brass instruments with emphasis on basic skills of performance as well as the appropriate teaching techniques, methods, and materials necessary for public school pedagogy. Course may be repeated for credit.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MED642 Percussion Techniques
1 credit
Offered By Announcement Only
Group instruction in percussion (snare drum, mallet-keyboard percussion, timpani, drum set, and small accessory instruments) with emphasis upon basic skills of performance as well as the appropriate teaching techniques, methods, and materials necessary for public school pedagogy. Course may be repeated for credit.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MED643 String Techniques
1 credit
Offered By Announcement Only
The study of stringed instruments (violin, viola, cello, bass) in a heterogeneous class with emphasis on general principles of string playing and teaching methods for use in beginning and intermediate instruction in the schools. Course may be repeated for credit.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MED644 Vocal Techniques
1 credit
Offered By Announcement Only
Class instruction in fundamentals of singing, breath control, tone production, and solo singing for music majors.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MED645 Functional Music Techniques
1 credit
Fall Semester
Group instruction in the functional use of guitar, autoharp, and recorder for classroom or music therapy uses. Functional skill, teaching methods, and materials are emphasized.
PREREQUISITE: PERMISSION OF INSTRUCTOR.
SCHOOL OF MUSIC
MUSIC EDUCATION & THERAPY

MED647 Seminar in Instrumental Music Education
2 credits                                                    Fall & Spring Semester
Practical study of the development of school band programs with special consideration
given to the selection of training and concert materials, rehearsal techniques
and administrative procedures.

MED657 Music Therapy Graduate Practicum 1
2 credits                                                    Fall & Spring Semester
In a clinical setting, gain skill in observation and co-leading under the supervision
of a music therapist.

MED658 Music Therapy Graduate Practicum 2
2 credits                                                    Fall & Spring Semester
PREREQUISITE: MED 657

MED659 Music Therapy Graduate Practicum 3
2 credits                                              Offered By Announcement Only
In a clinical setting, independently design and apply therapeutic techniques based
on scientific evidence.

MED660 History and Philosophy of Music Education
3 credits                                              Offered By Announcement Only
The history of Western music education beginning with the ancient Greeks is surveyed
to the present. Incorporated in the survey is the evolution of philosophical thought
about music and its role in educational practice. From this grounding, current
philosophical views of music education are presented.

MED662 Music Learning and Curriculum
3 credits                                                             Fall Semester
Survey of theories of music learning and their application to music instruction,
curriculum development, and instructional design in music.
PREREQUISITE: GRADUATE STANDING.

MED663 Music Research Methods
3 credits                                                             Fall Semester
An introduction to descriptive, experimental, philosophical, qualitative, and historical
research in music education and music therapy, with particular reference to data
collection, research design, and effective research procedures. Students prepare
critiques of research material and are guided in designing original research projects
related to their own area of interest.
PREREQUISITE: GRADUATE STANDING.

MED664 Music Assessment
3 credits                                                             Fall Semester
Presentation of methods for assessing musical behavior in studios, classrooms,
and concert halls. Strategies for the objectification of performance quality, musical
learning, capacity, and potential uses of contemporary measurement techniques are
provided.
PREREQUISITE: GRADUATE STANDING.

MED665 Seminar in Music Education
2 credits                                              Offered By Announcement Only
Survey of literature, bibliography, and contemporary trends in music education.
Course may be repeated for credit by doctoral students with consent of instructor.
PREREQUISITE: GRADUATE STANDING.
### MED670 Seminar in Music Teacher Education  
1 credit  
**Fall Semester**  
Overview of current issues in music teacher education, teacher education research and scholarship, the study of intern supervision, music education methods course design, and undergraduate music education teaching strategies.  
**PREREQUISITE:** DOCTORAL STANDING OR PERMISSION OF INSTRUCTOR.

### MED673 Music in Early Childhood  
2 credits  
**Spring Semester**  
Course provides theoretical foundations, curriculum, methods, and materials appropriate for the teaching of Early Childhood music.

### MED674 Seminar in General Music  
2 credits  
**Spring Semester**  
Course provides curriculum, methods, and materials designed for instruction for the general music student, grades K-12.

### MED675 Practicum in Music Education  
6 credits  
**Fall & Spring Semester**  
Students enrolled in the Master of Music with Certification Option Degree may complete the required internship with this course.  
**PREREQUISITE:** MUST BE EMPLOYED FULL-TIME IN A TEACHING POSITION.

### MED676 Practicum in Teaching College Students  
1-3 credits  
**Fall & Spring Semester**  
Supervised practicum for teaching music education courses at the college level.

### MED680 Doctoral Seminar  
1 credit  
**Offered By Announcement Only**  
A seminar designed to generate ideas about contemporary theory and practice in music. Students engage in discussion of general research topics, but from the perspective of their particular discipline. Enrollment is intended for those doctoral students who have satisfactorily completed the qualifying examinations through and until receiving approval of the doctoral paper proposal. The course is open to all majors, but is required of all music education doctoral students.  
**PREREQUISITE:** DOCTORAL STANDING.

### MED684 Music Therapy Seminar  
1 credit  
**Fall & Spring Semester**  
Doctoral seminar in music therapy to address practical and professional issues pertaining to teaching and research in music therapy. Possible topics include: Teaching and Clinical Supervision, Philosophical Research, and Historical Research.  
**PREREQUISITE:** STUDENTS MUST BE ADMITTED TO THE DOCTORAL PROGRAM IN MUSIC EDUCATION, WITH MUSIC THERAPY EMPHASIS.

### MED690 Teaching Music in College  
1 credit  
**Fall Semester**  
An overview of college music curriculum, patterns of administrative organization, traditional and innovative content, styles and resources used in teaching at the college level, evaluation and grading techniques used in classes, lessons, and ensembles.
MED693 Special Projects
1-3 credits  Fall & Spring Semester & First & Second Summer Session
Projects in any phase of music education in which the student is interested and qualified to work.
PREREQUISITE: GRADUATE MUSIC STUDENTS ONLY. DEAN'S APPROVAL AND SIGNATURE REQUIRED.

MED694 Special Projects
1-3 credits  Fall & Spring Semester
Projects in any phase of music education in which the student is interested and qualified to work.
PREREQUISITE: GRADUATE MUSIC STUDENTS ONLY. DEAN'S APPROVAL AND SIGNATURE REQUIRED.

MED695 Doctoral Research Project
1 credit  Fall & Spring Semester
Small scale research project in music education or music therapy, suitable for publication. This project could serve as pilot work for the dissertation.
PREREQUISITE: PH.D. STUDENTS IN MUSIC EDUCATION, MED 663, EPS 553.

MED705 Master's Project
1-3 credits  Fall Semester
Culminating project for Master of Music in music education students not completing a thesis or recital.
PREREQUISITE: MED 560, 564, 570, 665.

MED710 Master's Thesis
1-6 credits  Fall & Spring Semester & First & Second Summer Session
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.
PREREQUISITE: MED 629.

MED720 Research in Residence
0 credit  Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in MED 710 (usually six credits). Credit not granted. May be regarded as full time residence.

MED730 Doctoral Dissertation
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor but not for less than a total of 24. Not more than 12 hours of MED 730 may be taken in a regular semester, nor more than six in a summer session. Where a student has passed his/her (a) qualifying examinations, and (b) is engaged in an assistantship, he/she may still take the maximum allowable credit stated above.

MED735 Research for Specialist Project
1-6 credits  Fall & Spring Semester & First & Second Summer Session
The student working on a research project for the Music Specialist degree enrolls for credit, not to exceed six, as determined by the student’s advisor. Credit is not awarded until the project is completed.
MED750 Research in Residence  
0 credit  Fall & Spring Semester & First & Second Summer Session  
Used to establish research in residence for the Ph.D. and D.M.A., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

MED771 Associate Teaching in Elementary School Music  
6 credits  Fall & Spring Semester  
A comprehensive program in observation and supervised teaching in elementary school music. The student spends full time for one half a semester in an elementary school, participating in all activities of the music teacher under the guidance of school and university personnel.  
PREREQUISITE: ADMISSION TO TEACHER CANDIDACY AND APPROVAL OF THE COMMITTEE ON FIELD EXPERIENCES.

MED773 Associate Teaching in Secondary School Music  
6 credits  Fall & Spring Semester  
A comprehensive program in observation and supervised teaching in secondary school music. The student spends full time for one half a semester in a secondary school, participating in all activities of the music teacher under the guidance of school and university personnel.  
PREREQUISITE: ADMISSION TO TEACHER CANDIDACY AND APPROVAL OF THE COMMITTEE ON FIELD EXPERIENCES.

MUSIC MEDIA & INDUSTRY  

MMI501 Transducer Theory  
3 credits  Spring Semester  
Course covers the fundamentals of electromagnetism and audio transducer theory including loudspeaker and microphone systems. Classical electro-acoustical analysis of transducers including acoustic suspension, bass-reflex, transmission line, electrostatic and horn loudspeakers, dynamic, ribbon and condenser pressure, and pressure-gradient microphones. Students use computer-aided design programs and Thiele-Small parameterization to model loudspeakers and measure loudspeaker responses. Open to MUE and EAN Majors only.  
PREREQUISITE: EEN 201, PHY 102 OR PHY 205.

MMI502 Digital Audio I  
0-3 credits  Fall Semester  
A study of the theory and practice of digital audio topics including discrete time sampling, quantization, dithering, PCM, A/D and D/A conversion, digital filtering, oversampling, modulation codes, time base, error correction codes, magnetic storage, DAT, and optical storage.  
PREREQUISITE: MMI 501.

MMI503 Digital Audio II  
3 credits  Spring Semester  
A study of the theory and practice of digital audio topics including fiber optics and networks, compact disc, interconnection, psychoacoustics, low bit-rate perceptual coding, MPEG, digital audio broadcasting, sigma-delta conversion, noise shaping, digital video, and emerging technologies. Open to MUE and EAN Majors only.  
PREREQUISITE: MMI 502.
MMI504 Audio Analysis and Synthesis
3 credits
Offered By Announcement Only
Theory, design, and development of computer audio synthesizers and analyzers. Students implement software synthesizers including analog and physical modeling, wave-table, wave-shaping, and FM designs. Classical and modern theories of timbre and time-frequency analysis are included.
PREREQUISITE: MMI 503, OPEN TO MUE AND MEC MAJORS ONLY.

MMI505 Advanced Audio Signal Processing
3 credits
Spring Semester
Theory, design and development of audio signal processing techniques. Topics include DSP architectures, systems design, algorithm development, and applications. DSP development tools used to write, debug, and test programs including time-domain based effects such as reverb, chorus, flanging, and digital delay as well as frequency-domain projects such as FIR, IIR, and FFT filters and vocoders.
PREREQUISITE: MMI 504, OPEN TO MUE MAJORS ONLY.

MMI520 Audio Technology for Musicians
0-3 credits
Fall Semester
Introduction and overview of audio technology with emphasis on music recording, production equipment, and techniques. Topics include microphones, loudspeakers, mixing consoles, interconnection, amplifiers, digital processing, time code, and surround sound. Open to non-MUE majors.
PREREQUISITE: JUNIOR STANDING AND PERMISSION OF INSTRUCTOR.

MMI530 Entrepreneurship for Musicians
3 credits
Spring Semester
Course explores a wide range of options for musicians who want to pursue music business careers in their regional music markets. Students examine opportunities in performance, recording, composition, education, and more. Emphasis is placed on the packaging of musical skills in the marketplace and on the financial management of a small proprietary music business. As a result, the student musician will be prepared to make career decisions with foresight and planning.
PREREQUISITE: OPEN ONLY TO MUSIC STUDENTS

MMI537 Recorded Music Operations
3 credits
Spring Semester
A study of the activities involved in commercially exploiting recorded music. Includes an analysis of activities involved in the production, manufacturing, distribution, and marketing of a recorded music product; as well as related royalty accounting, mechanical licensing and master-use licensing activities.
PREREQUISITE: MMI 274 AND MMI 378; OPEN TO MBEI AND MBEC MAJORS, AND MBEI MINORS

MMI540 Music Supervision
3 credits
Fall & Spring Semester
A study of the principles and practices of combining music with visual images. The history, theory, tools, relationships and legalities of the field of Music Supervision will be explored.
PREREQUISITE: MMI 178; MBEI AND MBEC MAJORS, AND MBEI MINORS ONLY
MMI541 Tour Management and Production
3 credits  Fall & Spring Semester
Students will become familiar with the responsibilities of a tour planner. Individual
tour planning projects are assigned which will give the students insight into the
management and production of a tour.
PREREQUISITE: MMI 178; MBEI AND MBEC MAJORS, AND MBEI MINORS ONLY

MMI542 The Music Products Industry
3 credits  Fall & Spring Semester
The course is designed to give the students an overview of the music products industry.
Special attention is given to the trade associations and their role regionally,
nationally, and internationally. The importance of relationships as part of the
business foundation are discussed at length. Students present promotion/marketing
plans applicable to the products industry.
PREREQUISITE: MMI 178; MBEI AND MBEC MAJORS, AND MBEI MINORS ONLY

MMI543 Marketing and Promotion in the Entertainment Industry
3 credits  Fall & Spring Semester
PREREQUISITE: MMI 178; MBEI AND MBEC MAJORS, AND MBEI MINORS ONLY

MMI573 International Music Publishing
2 credits  Spring Semester
An in-depth study of the international publishing industry with an emphasis on
catalog development and exploitation.
PREREQUISITE: MMI 178 AND MMI 274; MBEI AND MBEC MAJORS, AND MBEI MINORS ONLY

MMI578 Royalties in the Recorded Music Industry
1 credit  Fall Semester
A practical study of royalty payment formulas and procedures used in the recorded
music industry.
PREREQUISITE: MMI 178 AND MMI 274; MBEI AND MBEC MAJORS, AND MBEI MINORS ONLY

MMI593 Special Topics MMI
1- 3 credits  Fall & Spring Semester & First & Second Summer Session
Supervised topics and other activities in specific areas of Music Media and Industry.
PREREQUISITE: DEAN'S APPROVAL AND SIGNATURE REQUIRED

MMI601 Advanced Digital Audio Electronics
3 credits  Fall Semester
Topics in digital audio including discrete time signals, digital filters, error
digital audio processors, FFT, CIRC, and digital recorders are discussed.
PREREQUISITE: MMI 401, GRADUATE STANDING.

MMI602 Audio-Video Systems
3 credits  Spring Semester
Compatibility and interface requirements for video, analog, and digital audio systems.
Integration of disparate components for optimum systems performance is discussed.
MMI606 Current Topics in Audio Analysis and Signal Processing  
3 credits  
Spring Semester  
MMI 606 surveys recent topics related to audio analysis, synthesis, and signal processing with an emphasis in software programming and practical applications. Course material is drawn from several topics: current audio APIs and plug-in architectures, computational theories of musical timbre, machine listening, spatial audio, digital audio effects, new digital audio synthesis techniques, and machine-musician interaction modalities.  
PREREQUISITE: MMI 601.

MMI622 Tour Management and Production  
3 credits  
Fall Semester  
An introductory course designed to give the students an overview of tour management and event production in the live entertainment industry. Special attention is given to arts presenting organizations and their role in the industry regionally, nationally and internationally.

MMI626 Performing Arts Center and Facility Management  
3 credits  
Fall Semester  
Students learn the many aspects of managing a live entertainment and performing arts center facility. Logistics, management, budgeting, marketing and programming within a live entertainment and performing arts facility are addressed.

MMI630 Marketing and Promotion in the Entertainment Industry  
3 credits  
Spring Semester  
Students learn how to fulfill demand and influence consumer behavior through effective marketing techniques. The course provides the students with information on the latest technologies being employed to reach and communicate with target market consumers.

MMI634 Sponsorship and Development in the Live entertainment Industry  
3 credits  
Spring Semester  
Students learn about the importance of sponsorship programs and how they are conceived, planned, negotiated and implemented tools, templates, and techniques provide a basis for creating a productive sponsorship program. The course also focuses on development and grants in the performing arts industry.

MMI636 Financial and Risk Aspects of the Arts Presenting Industry  
3 credits  
Fall Semester  
Students learn how to write and present a line-item budget for an arts presentation event, arts presenting organization, and an arts facility. Specific techniques and methods that are used to reduce event risk and safety are discussed.  
PREREQUISITE: NONE

MMI638 Legal Aspects of the Live Entertainment Industry  
3 credits  
Fall Semester  
Students become familiar with various Artist, Client, Production, Vendor and Facility Contracts and Agreements commonly used in the industry.
MMI640 Arts Presenting Project

3 credits

Offered By Announcement Only

Students develop and produce an Arts Presenting event. Students will be responsible for all aspects of budgeting, marketing, promotion and production of the event. This will be a semester long project requiring the knowledge and skills learned throughout the Arts Presenting Program.

PREREQUISITE: COMPLETION OF FIRST AND SECOND SEMESTER COURSES.

MMI642 Sponsorship and Development in the Live Entertainment Industry

3 credits

Fall Semester

Students learn about the importance of sponsorship programs and how they are conceived, planned, negotiated and implemented. Tools, templates, and techniques provide a basis for creating a productive sponsorship program. The course also focuses on development and grants in the performing arts industry.

MMI650 Music Industry Agreements

3 credits

Fall Semester

A study of various music industry agreements and how they affect the artist and songwriter. Recording, music publishing, and personal management agreements are analyzed and discussed. Topics include negotiation considerations, deal points, record company economics, and profitability.

PREREQUISITE: GRADUATE MBEI MAJORS ONLY OR PERMISSION OF INSTRUCTOR.

MMI651 Recording Studio Workshop

1 credit

Fall Semester

Introduction to the multi track recording studio environment. Hands-on lectures and labs including tracking, overdub and mixdown session management, techniques, and philosophies are included. Topics also include audio routing, equalization, effects, and microphone technique.

PREREQUISITE: PERMISSION OF INSTRUCTOR.

MMI652 International Music Licensing

3 credits

Spring Semester

Advanced music industry concepts and problems in music licensing. Personal rights and most varieties of music licenses and international licensing concepts are covered. Students acquire practical experience utilizing licensing parameters.

PREREQUISITE: OPEN TO GRADUATE MBEI MAJORS ONLY OR PERMISSION OF INSTRUCTOR.

MMI653 Transducer Workshop

1 credit

Spring Semester

Fundamentals of electromagnetism and audio transducer theory including loudspeaker and microphone systems. Classical electro-acoustical analysis of transducers including acoustic suspensions, bass-reflex, transmission line, electrostatic and horn loudspeakers, dynamic, ribbon and condenser pressure, and pressure-gradient microphones. Students use computer-aided design programs and Thiele-Small parameterization to model loudspeakers and measure loudspeaker responses.

PREREQUISITE: PERMISSION OF INSTRUCTOR.
MMI656 Entertainment Industry Practices
3 credits  Fall Semester
An overview of entertainment industry practices. Concentration on the legal, marketing and financial aspects of different areas of the industry focusing primarily on film, television, and book publishing, while also broadly exploring additional areas such as video games, sports, and performing arts.
PREREQUISITE: OPEN TO MBEI GRADUATE STUDENTS ONLY; OTHER GRADUATE STUDENTS BY PERMISSION ONLY.

MMI660 Ensemble Recording Workshop I
1 credit  Offered By Announcement Only
Assisting recording and sound reinforcement engineers in the assigned performance ensemble in both rehearsal and performance. Students also perform in a studio ensemble where they act as both recording engineer and musician. Open to MUE majors only.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MMI661 Ensemble Recording Workshop II
1 credit  Offered By Announcement Only
Students are responsible for the audio needs of an assigned ensemble in both rehearsal and performance. Lectures cover audio equipment and practices. Students also perform in a studio ensemble where they act as the recording engineer and musician. Open to MUE majors only.
PREREQUISITE: MMI 660. PERMISSION OF INSTRUCTOR.

MMI662 Ensemble Recording Workshop III
1 credit  Offered By Announcement Only
Students work in the recording studio, engineering digital multi-track recordings, and mix-downs of advanced jazz and composition ensembles. Open to MUE majors only.
PREREQUISITE: MMI 661. PERMISSION OF INSTRUCTOR.

MMI670 Audio Design Workshop I
1 credit  Offered By Announcement Only
Course covers the fundamentals of audio system design and architecture including equipment specifications and studio installation techniques. Students design and troubleshoot audio projects. Open to MUE majors only.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MMI671 Audio Design Workshop II
1 credit  Offered By Announcement Only
Analog audio system design and architecture including dynamics processing, amplifier and filter theory, balanced and single-ended systems, circuits, and advanced equipment specifications. Students design and troubleshoot audio projects including microphone pre-amps, equalizers, noise gates, and power amplifiers. Open to MUE Majors only.
PREREQUISITE: PHY 205, EEN 305. PERMISSION OF INSTRUCTOR.

MMI672 Audio Design Workshop III
1 credit  Offered By Announcement Only
Digital audio system design and architecture including analog-digital conversion, digital I/O hardware specifications, audio effects processors and digital audio reordering alignment techniques. Students design and troubleshoot audio projects including A/D converters, S/PDIF I/O, and DAT recorders. Open to MUE Majors only.
PREREQUISITE: MMI 671.
MMI673 Music Publishing Practicum  
1 credit  
Fall Semester  
The course focuses on practical techniques and procedures employed by music publishers in acquiring, exploiting and administering music copyrights.  
PREREQUISITE: MBEI GRADUATE STUDENTS ONLY.

MMI674 Music Copyright Law  
3 credits  
Fall Semester  
A study of the essential provisions of the 1976 Copyright Act and subsequent amendments and revisions. Students examine the unique complexities of copyright law as it relates to the music industry.  
PREREQUISITE: NONE. PERMISSION OF INSTRUCTOR REQUIRED FOR NON-MBEI GRADUATE STUDENTS.

MMI678 Publishing and Record Industry Royalties  
1 credit  
Fall Semester  
An in depth study of royalty payment procedures used in the music industry.  
PREREQUISITE: MBEI GRADUATE STUDENTS ONLY.

MMI682 Industry Internship  
3 credits  
Spring Semester  
The student's academic experience is enhanced by working in a professional arts presenting organization or arts facility.  
PREREQUISITE: COMPLETION OF ALL THE COURSES (27 HOURS) OFFERED IN THE FIRST THREE SEMESTERS OF THE PROGRAM.

MMI693 Special Projects  
1-3 credits  
Fall & Spring Semester  
Projects in any phase of music media and industry in which the student is interested and qualified to work.  
PREREQUISITE: GRADUATE MUSIC STUDENTS ONLY. DEAN'S APPROVAL AND SIGNATURE REQUIRED.

MMI694 Special Projects  
1-3 credits  
Fall & Spring Semester  
Projects in any phase of music media and industry in which the student is interested and qualified to work.  
PREREQUISITE: GRADUATE MUSIC STUDENTS ONLY. DEAN'S APPROVAL AND SIGNATURE REQUIRED.

MMI702 Internship in Music Industry  
2-3 credits  
Fall & Spring Semester & First & Second Summer Session  
Practical experience in different areas of the music industry under supervision of professional firms. Open only to Music Industry majors.  
PREREQUISITE: GRADUATE MBEI MAJORS ONLY.

MMI713 Master's Research Project  
1-3 credits  
Fall & Spring Semester & First & Second Summer Session  
The student working on his/her master's research project enrolls for credit as determined by his/her advisor. Credit is not awarded until the project paper is accepted.

MMI720 Research in Residence  
0 credit  
Fall & Spring Semester & First & Second Summer Session  
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in MMI 710 (usually six credits). Credit not granted. May be regarded as full time residence.
MTC501 The Aesthetics of Music  
3 credits  
Spring Semester  
Survey of thought and discourse about the nature, roles, values, experiences, and meanings of music. Variety of perspectives, including those of the listener, performer, and composer are addressed. Application to musical interpretation and criticism is included.
PREREQUISITE: MTC 311 OR 312 OR GRADUATE STANDING.

MTC505 Analysis and History of Electroacoustic and Acousmatic Music  
2 credits  
Fall Semester  
Introduction to electroacoustic music and the digital electronic music studio. Computer and MIDI based applications in performance and composition including sequencing, music notation, and electronic orchestration are addressed. Theoretical and aesthetic issues relating to music technology, study of important figures and works. Lectures, reading, listening, and studio assignments leading to individual projects are also included.
PREREQUISITE: MTC 312 OR PERMISSION

MTC506 Digital Editing and Sequencing  
2 credits  
Spring Semester  
Computers as control devices for music synthesis. Topics include interfacing microcomputers and synthesizers, programming of controllers, sequencers, patch librarians, sound editors, and other applications. Computer assisted composition and performance techniques, lectures, reading, listening, and studio assignments leading to individual projects are also included.

MTC507 Studio Licensing  
2 credits  
Fall & Spring Semester  
Software-based techniques of digital audio recording and editing, sound synthesis/design, audio signal processing, and sound analysis. Lectures, reading, listening, and studio assignments leading to individual projects in synthesis, composition, performance, or programming are included.
PREREQUISITE: MTC 506

MTC511 Film Scoring I  
2 credits  
Fall Semester  
Seminar in the aesthetics and psychology of mood music, sound-film synchronization, timing techniques, and scoring procedures. Analysis and performance of student projects is included.
PREREQUISITE: MTC 302

MTC512 Film Scoring II  
2 credits  
Spring Semester  
Adaptation of previous semester's techniques to television scripts and performed music. Pre-recording, direct recording, and dubbing procedures are included as well as preparation and performance of complete film cues. Each student is required to conduct his/her project.
PREREQUISITE: MTC 511.

MTC513 16th Century Counterpoint  
3 credits  
Offered By Announcement Only  
Two- and three-voice vocal counterpoint based on Palestrina's style, beginning with studies of strict species and including composition of two- and three-voice texted motets.
PREREQUISITE: MTC 211 OR MTC 240
MTC515 Choral Arranging
3 credits  Spring Semester
Arranging for choir and vocal groups with and without instrumental accompaniment in all styles.
PREREQUISITE: MTC 212 OR MTC 241

MTC516 Advanced Orchestration
3 credits  Spring Semester
Scoring for the symphonic orchestra with an emphasis on recent techniques.
PREREQUISITE: MTC 416

MTC517 Analysis of Popular Music Since 1950
3 credits  Offered By Announcement Only
Course examines popular music in the second half of the Twentieth Century from a music analytical perspective. Critical skills needed for this analysis are identified and developed. Analytical techniques for understanding the determination and utilization of musical elements and structures in contemporary popular music are applied. Various contemporary genres and some precursors are examined and particular stylistic determinants of their compositional and performance models are discussed.
PREREQUISITE: GRADUATE STANDING OR MTC 311 OR 312, OR PERMISSION OF THE INSTRUCTOR.

MTC518 Advanced Counterpoint
3 credits  Spring Semester
Three-voice fugal writing in Bach's style, followed by compositional projects in a variety of twentieth-century contrapuntal styles.
PREREQUISITE: MTC 313

MTC521 Multimedia for Musicians
3 credits  Offered By Announcement Only
Presents an overview and introduction to the creation of multimedia projects for presentation on the Web. Focus is placed on building websites, and the creation of multimedia content for online delivery. Software tools for the manipulation of digital media, including audio and video, are utilized in the realization of course projects.
PREREQUISITE: MTC 212 AND MKP 220, OR MTC 241 AND MMI 240 AND 241, OR GRADUATE STANDING.

MTC567 Electronic and Computer Music Seminar
1-3 credits  Fall & Spring Semester
Advanced techniques and applications in electronic and computer music. Topics may include electronic projects in composition, performance, research, programming, or other as approved by instructor.
PREREQUISITE: MTC 505, 506, 507

MTC593 Special Topics MTC
1-3 credits  Fall & Spring Semester & First & Second Summer Session
Supervised topics and other activities in specific areas of Music Theory-Composition.
PREREQUISITE: DEAN'S APPROVAL AND SIGNATURE REQUIRED

MTC605 Digital Art and Sound Design
2 credits  Spring Semester
Basic concepts of circuits for electronic and computer music equipment, electronic music studio design, and maintenance.
PREREQUISITE: MTC 507
MTC611 Theory Pedagogy
3 credits  Fall Semester
Seminar in methods and materials pertinent to the teaching of theory in high school and college.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MTC612 Advanced Comprehensive Theory
3 credits  Fall Semester
Melodic, harmonic, and contrapuntal devices as revealed through analysis and applied in composition.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MTC613 Twentieth Century Idioms
3 credits  Spring Semester
Relevant modes of perception, influences, and technical devices in 20th century music.

MTC615 Composition Seminar I
2 credits  Fall Semester
Creative work in composition requiring a multi-movement work scored for full orchestra, symphonic band, or chorus with orchestra or band.

MTC616 Composition Seminar II
2 credits  Spring Semester
Continuation of MTC 615.
PREREQUISITE: MTC 615.

MTC617 Analytical Techniques
3 credits  Fall & Spring Semester & Second Summer Session
Examination and practice of various techniques used in the analysis of music.

MTC619 Introduction to Schenkerian Analysis
3 credits  Fall Semester
A first course in the theory and analytical practice of Heinrich Schenker. Students will learn the principles and techniques of Schenkerian analysis and will apply them to the study of works in smaller sectional forms.
PREREQUISITE: MTC 617 OR PERMISSION OF THE INSTRUCTOR.

MTC646 Studio Production
1 credit  Offered By Announcement Only
Recording studio production procedures. Topics include artist and material selection, session planning, and analysis of the producer's role. Course may be repeated for credit.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MTC648 Electronic Music Ensemble
1 credit  Offered By Announcement Only
PREREQUISITE: BY AUDITION.

MTC652 Research Seminar II
2 credits  Offered By Announcement Only
MTC667 Advanced Electronic and Computer Music Seminar
1-3 credits    Fall & Spring Semester
Advanced techniques and applications in electronic and computer music. Topics may include electronic projects in composition, performance, research, programming, or other as approved by instructor.
PREREQUISITE: MTC 505, 506, 507, OR CONSENT OF INSTRUCTORS.

MTC668 Projects in Media Writing and Production
1-3 credits   Offered By Announcement Only
Supervised projects in specific areas of Media Writing and Production.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MTC682 Composition Workshop
1 credit                                                     Fall & Spring Semester

MTC693 Special Projects
1-3 credits    Fall & Spring Semester
Projects in any phase of theory-composition in which the student is interested and qualified to work.
PREREQUISITE: GRADUATE MUSIC STUDENTS ONLY. DEAN'S APPROVAL AND SIGNATURE REQUIRED.

MTC694 Special Projects
1-3 credits    Fall & Spring Semester
Projects in any phase of theory-composition in which the student is interested and qualified to work.
PREREQUISITE: GRADUATE MUSIC STUDENTS ONLY. DEAN'S APPROVAL AND SIGNATURE REQUIRED.

MTC696 Studio Production Ensemble
1 credit                                               Offered By Announcement Only
PREREQUISITE: BY AUDITION.

MTC697 Studio Rhythm Section
1 credit                                                     Fall & Spring Semester
PREREQUISITE: BY AUDITION.

MTC699 The Other Music Ensemble
1 credit                                                     Fall & Spring Semester
An in-depth study and performance of 20th century music.
PREREQUISITE: BY AUDITION.

MTC710 Master's Thesis
1-6 credits    Fall & Spring Semester & First & Second Summer Session
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

MTC713 Master's Media Writing Project
1-3 credits    Fall & Spring Semester & First & Second Summer Session
The student working on his/her master's media writing project enrolls for credit as determined by his/her advisor. Credit is not awarded until the project paper is accepted.
MTC720 Research in Residence
0 credit  Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master's degree
after the student has enrolled for the permissible cumulative total in MTC 710
(usually six credits). Credit not granted. May be regarded as full time residence.

MTC731 Doctoral Essay
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the D.M.A. The student will enroll for credit as
determined by his/her advisor, but not for less than a total of 12. Not more than
12 hours of MTC 731 may be taken in a regular semester, nor more than six in a
summer session.

MTC750 Research in Residence
0 credit  Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D. and D.M.A., after the student
has been enrolled for the permissible cumulative total in appropriate doctoral
research. Credit not granted. May be regarded as full-time residence as determined
by the Dean of the Graduate School.

MUSICOLOGY
MCY520 History and Literature of the Wind Band
3 credits  Fall Semester
An historical survey of wind band literature, the evolution of the military band,
the wind band, and the wind orchestra.

MCY521 Symphonic Literature
3 credits  Spring Semester
A survey of orchestral music from the end of the seventeenth century to the present.

MCY522 Operatic Literature
3 credits  Spring Semester
The history and literature of opera from the end of the sixteenth century to the
present.

MCY524 Contemporary Music
3 credits  Fall Semester
Music of the 20th century, with emphasis on developments since 1945.

MCY525 Art Song Literature
3 credits  Spring Semester
A survey of the solo vocal literature from the 16th century to the present, with
particular emphasis on the 19th-century French and German repertoire.

MCY526 Keyboard Literature I
3 credits  Fall Semester
A survey of keyboard literature from its beginning to approximately 1750 emphasizing
changes in styles of writing and expression, development of techniques suited to
the primary instruments in use (including the early organ, clavichord, harpsichord
and fortepiano), ornamentation both specified and improvised, forms, and ideas
for interpretation based on historical sources.
MCY527 Keyboard Literature II
3 credits  
Spring Semester
A survey of solo keyboard literature from approximately 1750 to the present emphasizing changes in styles of writing and expression, development of technique suited to the primary instruments in use (including the clavichord, harpsichord, fortepiano and modern piano), embellishment both specified and improvised, forms, and ideas for interpretation based on historical sources (including facsimiles, printed scores, written records and sound recordings, particularly those by the composers themselves).

MCY528 Music Bibliography
3 credits  
Fall Semester
Course presents research materials, including dictionaries, encyclopedias, historical collections, scholarly editions, complete works, books, articles, and lists dealing with specialized areas of music history and literature.
PREREQUISITE: GRADUATE STANDING, OR PERMISSION OF INSTRUCTOR.

MCY529 Music of the Baroque Period
3 credits  
Spring Semester
Literature and history of music from the end of the sixteenth to the middle of the eighteenth centuries.
PREREQUISITE: SIX CREDITS OF UNDERGRADUATE MUSIC HISTORY.

MCY530 Music of the Classical Period
3 credits  
Fall Semester
The musical styles which developed between the mid-eighteenth century and the nineteenth century.

MCY532 History of Chamber Music
3 credits  
Fall Semester
Styles and forms in chamber music literature from the seventeenth century to the present.

MCY533 Music of the Romantic Period
3 credits  
Spring Semester
The musical styles which developed during the nineteenth century.
PREREQUISITE: SENIOR STANDING OR PERMISSION OF INSTRUCTOR.

MCY535 Choral Literature I
2 credits  
Fall Semester
Choral music of the sixteenth through the eighteenth centuries. A combination of lecture-discussion and class performance.

MCY536 Choral Literature II
2 credits  
Fall Semester
Choral music of the nineteenth and twentieth centuries. A combination of lecture-discussion and class performance.

MCY537 Music in the United States
3 credits  
Spring Semester
A survey of music in the United States from colonial times to the present, with emphasis on the social, economic, and political conditions which affected it. Art music (sacred and secular), popular music in all idioms, the music industry as it evolved in the U.S., and the influence of American music on the music of other countries.
MCY538 Music, Gender, and Sexuality
3 credits Spring Semester
An exploration of music from around the world from the perspective of women. We will examine the roles women have played, and still play, as creators and performers in art music and popular music traditions. Representations of women and gender ideologies will also be discussed.

MCY541 Music of the Mediaeval, Renaissance, and Baroque Periods
3 credits Fall Semester & First Summer Session
A comprehensive, in-depth study of the musical styles and genres of the Mediaeval, Renaissance, and Baroque Eras. Important musical figures of these periods and analytical studies of important pieces of music from these periods are addressed.

MCY542 Music of the Classical, Romantic, and Modern Periods
3 credits Spring Semester & Second Summer Session
A comprehensive, in-depth study of the musical styles and genres of the Classical, Romantic, and Modern Eras of important musical figures of these periods, and analytical studies of important pieces of music from these periods.

MCY553 Miami’s Musical Heritage
3 credits Spring Semester & First Summer Session
A study of the musical traditions and practices of the various cultures that are part of Miami’s unique multi-ethnic society.

MCY554 Music Cultures of the World: Argentina and Brazil
3 credits Offered By Announcement Only
A study of music culture of the region including the music of folk societies, popular artists, and classical musicians. Open to non-majors.
PREREQUISITE: UPPERCLASS STANDING OR PERMISSION OF THE INSTRUCTOR.

MCY562 Music of Argentina and Brazil.
3 credits Spring Semester
An in-depth study of Argentine and Brazilian musical cultures covering folk, popular, and classical traditions. Open to non-majors.

MCY564 Seminar in Latin American Music Collections
3 credits Fall Semester
Examines Latin American music materials at the Cuban Heritage Collection and Special Collections at the Richter Library. Focuses on interpreting original documents and acquiring archival techniques.
PREREQUISITE: MINIMUM JUNIOR STANDING. READING KNOWLEDGE OF SPANISH.

MCY583 History of the American Musical Theatre
3 credits Fall Semester
An examination of the development of musical theatre from its European opera and operetta background to an indigenous American art form. The areas to be explored include the rise and fall of various genre of musical shows, integration of story, song and dance, important producers, directors, lyricists, composers, and new fields such as director-choreographer. The development of an American cultural consciousness and political and socio-economic trends of various decades that greatly influenced the content and form of musical shows is also examined.
MCY593 Special Topics MCY
1-3 credits Fall & Spring Semester & First & Second Summer Session
Supervised topics and other activities in specific areas of Musicology.
PREREQUISITE: DEAN'S APPROVAL AND SIGNATURE REQUIRED

MCY693 Special Projects
1-3 credits Fall & Spring Semester & First & Second Summer Session
Projects in any phase of music literature and history in which the student is interested and qualified to work.
PREREQUISITE: GRADUATE MUSIC STUDENTS ONLY. DEAN'S APPROVAL AND SIGNATURE REQUIRED.

MCY694 Special Projects
1-3 credits Fall & Spring Semester
Projects in any phase of music literature and history in which the student is interested and qualified to work.
PREREQUISITE: GRADUATE MUSIC STUDENTS ONLY. DEAN'S APPROVAL AND SIGNATURE REQUIRED.

MCY710 Master's Thesis
1-6 credits Fall & Spring Semester & First & Second Summer Session
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

MCY720 Research in Residence
0 credit Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in MCY 710 (usually six credits). Credit not granted. May be regarded as full time residence.

MCY730 Doctoral Dissertation
1-12 credits Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor but not for less than a total of 24. Not more than 12 hours of MCY 730 may be taken in a regular semester, nor more than six in a summer session. Where a student has passed his/her (a) qualifying examinations, and (b) is engaged in an assistantship, he/she may still take the maximum allowable credit stated above.

MCY750 Research in Residence
0 credit Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D. and D.M.A., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

STUDIO MUSIC & JAZZ
MSJBJI Jazz Bass
1-3 credits Fall & Spring Semester
Jazz Bass at the Master's level. The student will pursue a course of study that is directed toward his/her musical goals. This course will examine, through transcription and analysis, the important figures in the history of Jazz bass, and also those performances in which the student is interested.
PREREQUISITE: MASTER'S LEVEL. BY AUDITION.
STUDIO MUSIC & JAZZ

MSJJBJ Jazz Bass
1- 3 credits  Fall & Spring Semester
Continuation of MSJ JBI.
PREREQUISITE: MASTER'S LEVEL. MSJ JBI.

MSJJBK Jazz Bass
1- 3 credits  Fall & Spring Semester & First & Second Summer Session
Continuation of MSJ JBK.
PREREQUISITE: MASTER'S LEVEL. MSJ JBK.

MSJJBL Jazz Bass
1- 3 credits  Fall & Spring Semester
This semester will focus on the student's graduate recital performance, if applicable.
PREREQUISITE: MASTER'S LEVEL. MSJ JBK.

MSJJBM Jazz Bass
1- 3 credits  Fall & Spring Semester
Jazz Bass at the Doctoral level. The student will pursue a course of study that is directed towards his/her musical goals. This course will also examine, through transcription and analysis, the important figures in the history of jazz bass, and also those performances in which the student is interested.
PREREQUISITE: DOCTORAL LEVEL. BY AUDITION.

MSJJBN Jazz Bass
1- 3 credits  Fall & Spring Semester
Continuation of MSJ JBM.
PREREQUISITE: DOCTORAL LEVEL. MSJ JBM.

MSJJBO Jazz Bass
1- 3 credits  Fall & Spring Semester
Continuation of MSJ JBN.
PREREQUISITE: DOCTORAL LEVEL. MSJ JBN.

MSJJBP Jazz Bass
1- 3 credits  Fall & Spring Semester
Continuation of MSJ JBO.
PREREQUISITE: DOCTORAL LEVEL. MSJ JBO.

MSJJBQ Jazz Bass
1- 3 credits  Fall & Spring Semester
Continuation of MSJ JBP.
PREREQUISITE: DOCTORAL LEVEL. MSJ JBP.

MSJJBR Jazz Bass
1- 3 credits  Fall & Spring Semester
Continuation of MSJ JBQ.
PREREQUISITE: DOCTORAL LEVEL. MSJ JBQ.

MSJJDI Jazz Drumset
1- 3 credits  Fall & Spring Semester
Private lessons which focus on the development of drumset skills. The course will cover sticking technique, hand/foot patterns, groove, balance, and rhythm section interaction. Students are required to perform and improvise at a professional level.
PREREQUISITE: MASTER'S LEVEL. BY AUDITION.
**MSJJDJ Jazz Drumset**

1-3 credits    Fall & Spring Semester  
Private lessons which focus on the development of drumset skills. The course will cover sticking technique, hand/foot patterns, groove, balance, and rhythm section interaction. Students are required to perform and improvise at a professional level.  
PREREQUISITE: MASTER'S LEVEL. MSJ JDJ.

**MSJJK Jazz Drumset**

1-3 credits Fall & Spring Semester & First & Second Summer Session  
Private lessons which focus on the development of drumset skills. The course will cover sticking technique, hand/foot patterns, groove, balance, and rhythm section interaction. Students are required to perform and improvise at a professional level.  
PREREQUISITE: MASTER'S LEVEL. MSJ JDJ.

**MSJJDIL Jazz Drumset**

1-3 credits Fall & Spring Semester  
Private lessons which focus on the development of drumset skills. The course will cover sticking technique, hand/foot patterns, groove, balance, and rhythm section interaction. Students are required to perform and improvise at a professional level.  
PREREQUISITE: MASTER'S LEVEL. MSJ JDJ.

**MSJJDMM Jazz Drumset**

1-3 credits Fall & Spring Semester  
Private lessons which focus on the development of drumset skills. The course will cover sticking technique, hand/foot patterns, groove, balance, and rhythm section interaction. Students are required to perform and improvise at a professional level.  
PREREQUISITE: DOCTORAL LEVEL. BY AUDITION.

**MSJJDNN Jazz Drumset**

1-3 credits Fall & Spring Semester  
Private lessons which focus on the development of drumset skills. The course will cover sticking technique, hand/foot patterns, groove, balance, and rhythm section interaction. Students are required to perform and improvise at a professional level.  
PREREQUISITE: DOCTORAL LEVEL. MSJ JDM.

**MSJJDNO Jazz Drumset**

1-3 credits Fall & Spring Semester  
Private lessons which focus on the development of drumset skills. The course will cover sticking technique, hand/foot patterns, groove, balance, and rhythm section interaction. Students are required to perform and improvise at a professional level.  
PREREQUISITE: DOCTORAL LEVEL. MSJ JDN.

**MSJJDPO Jazz Drumset**

1-3 credits Fall & Spring Semester  
Private lessons which focus on the development of drumset skills. The course will cover sticking technique, hand/foot patterns, groove, balance, and rhythm section interaction. Students are required to perform and improvise at a professional level.  
PREREQUISITE: DOCTORAL LEVEL. MSJ JDO.

**MSJJDQQ Jazz Drumset**

1-3 credits Fall & Spring Semester  
Private lessons which focus on the development of drumset skills. The course will cover sticking technique, hand/foot patterns, groove, balance, and rhythm section interaction. Students are required to perform and improvise at a professional level.  
PREREQUISITE: DOCTORAL LEVEL. MSJ JDP.
SCHOOL OF MUSIC
STUDIO MUSIC & JAZZ

MSJJDR Jazz Drumset
1-3 credits  Fall & Spring Semester
Private lessons which focus on the development of drumset skills. The course will cover sticking technique, hand/foot patterns, groove, balance, and rhythm section interaction. Students are required to perform and improvise at a professional level.
PREREQUISITE: DOCTORAL LEVEL. MSJ JDQ.

MSJJGI Jazz Guitar
1-3 credits  Fall & Spring Semester
Graduate Studies in Jazz Guitar are designed to take into account each student's talent, previous accomplishments and particular interests. After a careful assessment of the student's strengths and weaknesses, a course of study will be custom-designed, with possible areas of study drawn from (but not limited to) the following list:
advanced jazz concepts in melody, harmony and rhythm, sight-reading, repertoire expansion, transposition, technique, composition, and pedagogy.
PREREQUISITE: MASTER'S LEVEL. BY AUDITION.

MSJJGJ Jazz Guitar
1-3 credits  Fall & Spring Semester
Graduate Studies in Jazz Guitar are designed to take into account each student's talent, previous accomplishments and particular interests. After a careful assessment of the student's strengths and weaknesses, a course of study will be custom-designed, with possible areas of study drawn from (but not limited to) the following list:
advanced jazz concepts in melody, harmony and rhythm, sight-reading, repertoire expansion, transposition, technique, composition, and pedagogy.
PREREQUISITE: MASTER'S LEVEL. BY AUDITION.

MSJJGK Jazz Guitar
1-3 credits  Fall & Spring Semester & First & Second Summer Session
Graduate Studies in Jazz Guitar are designed to take into account each student's talent, previous accomplishments and particular interests. After a careful assessment of the student's strengths and weaknesses, a course of study will be custom-designed, with possible areas of study drawn from (but not limited to) the following list:
advanced jazz concepts in melody, harmony and rhythm, sight-reading, repertoire expansion, transposition, technique, composition, and pedagogy.
PREREQUISITE: MASTER'S LEVEL. MSJ JGJ.

MSJJGL Jazz Guitar
1-3 credits  Fall & Spring Semester
Graduate Studies in Jazz Guitar are designed to take into account each student's talent, previous accomplishments and particular interests. After a careful assessment of the student's strengths and weaknesses, a course of study will be custom-designed, with possible areas of study drawn from (but not limited to) the following list:
advanced jazz concepts in melody, harmony and rhythm, sight-reading, repertoire expansion, transposition, technique, composition, and pedagogy.
PREREQUISITE: MASTER'S LEVEL. MSJ JGK.
MSJJGM Jazz Guitar
1-3 credits    Fall & Spring Semester
Graduate Studies in Jazz Guitar are designed to take into account each student's talent, previous accomplishments and particular interests. It is expected that a graduate student at the DMA level would be, to a large extent, self-directing and capable of original research. After a careful assessment of the student's strengths and weaknesses, a course of study will be custom-designed, with possible areas of study drawn from (but not limited to) the following list: advanced jazz concepts in melody, harmony and rhythm, sight-reading, repertoire expansion, transposition, technique, composition, and pedagogy. Assistance with recital preparation will be given as appropriate and necessary. The prerequisite for the first level (JGM) is a Master's Degree and the successful completion of the audition for the DMA program.
PREREQUISITE: DOCTORAL LEVEL. BY AUDITION.

MSJJGN Jazz Guitar
1-3 credits    Fall & Spring Semester
Graduate Studies in Jazz Guitar are designed to take into account each student's talent, previous accomplishments and particular interests. It is expected that a graduate student at the DMA level would be, to a large extent, self-directing and capable of original research. After a careful assessment of the student's strengths and weaknesses, a course of study will be custom-designed, with possible areas of study drawn from (but not limited to) the following list: advanced jazz concepts in melody, harmony and rhythm, sight-reading, repertoire expansion, transposition, technique, composition, and pedagogy. Assistance with recital preparation will be given as appropriate and necessary. The prerequisite for the first level (JGM) is a Master's Degree and the successful completion of the audition for the DMA program.
PREREQUISITE: DOCTORAL LEVEL. MSJ JGM.

MSJJGO Jazz Guitar
1-3 credits    Fall & Spring Semester
Graduate Studies in Jazz Guitar are designed to take into account each student's talent, previous accomplishments and particular interests. It is expected that a graduate student at the DMA level would be, to a large extent, self-directing and capable of original research. After a careful assessment of the student's strengths and weaknesses, a course of study will be custom-designed, with possible areas of study drawn from (but not limited to) the following list: advanced jazz concepts in melody, harmony and rhythm, sight-reading, repertoire expansion, transposition, technique, composition, and pedagogy. Assistance with recital preparation will be given as appropriate and necessary. The prerequisite for the first level (JGM) is a Master's Degree and the successful completion of the audition for the DMA program.
PREREQUISITE: DOCTORAL LEVEL. MSJ JGN.
MSJJGP Jazz Guitar
1-3 credits    Fall & Spring Semester
Graduate Studies in Jazz Guitar are designed to take into account each student's talent, previous accomplishments and particular interests. It is expected that a graduate student at the DMA level would be, to a large extent, self-directing and capable of original research. After a careful assessment of the student's strengths and weaknesses, a course of study will be custom-designed, with possible areas of study drawn from (but not limited to) the following list: advanced jazz concepts in melody, harmony and rhythm, sight-reading, repertoire expansion, transposition, technique, composition, and pedagogy. Assistance with recital preparation will be given as appropriate and necessary. The prerequisite for the first level (JGM) is a Master's Degree and the successful completion of the audition for the DMA program.
PREREQUISITE: DOCTORAL LEVEL. MSJ JGO.

MSJJGQ Jazz Guitar
1-3 credits    Fall & Spring Semester
Graduate Studies in Jazz Guitar are designed to take into account each student's talent, previous accomplishments and particular interests. It is expected that a graduate student at the DMA level would be, to a large extent, self-directing and capable of original research. After a careful assessment of the student's strengths and weaknesses, a course of study will be custom-designed, with possible areas of study drawn from (but not limited to) the following list: advanced jazz concepts in melody, harmony and rhythm, sight-reading, repertoire expansion, transposition, technique, composition, and pedagogy. Assistance with recital preparation will be given as appropriate and necessary. The prerequisite for the first level (JGM) is a Master's Degree and the successful completion of the audition for the DMA program.
PREREQUISITE: DOCTORAL LEVEL. MSJ JGQ.

MSJJGR Jazz Guitar
1-3 credits    Fall & Spring Semester
Graduate Studies in Jazz Guitar are designed to take into account each student's talent, previous accomplishments and particular interests. It is expected that a graduate student at the DMA level would be, to a large extent, self-directing and capable of original research. After a careful assessment of the student's strengths and weaknesses, a course of study will be custom-designed, with possible areas of study drawn from (but not limited to) the following list: advanced jazz concepts in melody, harmony and rhythm, sight-reading, repertoire expansion, transposition, technique, composition, and pedagogy. Assistance with recital preparation will be given as appropriate and necessary. The prerequisite for the first level (JGM) is a Master's Degree and the successful completion of the audition for the DMA program.
PREREQUISITE: DOCTORAL LEVEL. MSJ JGP.

MSJJPI Jazz Piano
1-3 credits    Fall & Spring Semester
Exploration of the jazz piano tradition with an emphasis on advanced artists. Discussion of solo piano arranging and reharmonization techniques. Improvisation on non-symmetrical forms and advanced modal compositions.
PREREQUISITE: MASTER'S LEVEL. BY AUDITION.
MSJJPJ Jazz Piano
1-3 credits  Fall & Spring Semester
Exploration of the jazz piano tradition with an emphasis on advanced artists. Discussion of solo piano arranging and reharmonization techniques. Improvisation on non-symmetrical forms and advanced modal compositions.
PREREQUISITE: MASTER'S LEVEL. MSJJP.

MSJJPK Jazz Piano
1-3 credits  Fall & Spring Semester & First & Second Summer Session
Exploration of the jazz piano tradition with an emphasis on advanced artists. Discussion of solo piano arranging and reharmonization techniques. Improvisation on non-symmetrical forms and advanced modal compositions.
PREREQUISITE: MASTER'S LEVEL. MSJJP.

MSJJPL Jazz Piano
1-3 credits  Fall & Spring Semester
Exploration of the jazz piano tradition with an emphasis on advanced artists. Discussion of solo piano arranging and reharmonization techniques. Improvisation on non-symmetrical forms and advanced modal compositions.
PREREQUISITE: MASTER'S LEVEL. MSJJP.

MSJJPM Jazz Piano
1-3 credits  Fall & Spring Semester
Development of an individual voice and style. Composition in the solo piano and trio format: orchestrational techniques on the piano as derived from orchestra and big band, discussion of form and structure.
PREREQUISITE: DOCTORAL LEVEL. BY AUDITION.

MSJJPN Jazz Piano
1-3 credits  Fall & Spring Semester
Development of an individual voice and style. Composition in the solo piano and trio format: orchestrational techniques on the piano as derived from orchestra and big band, discussion of form and structure.
PREREQUISITE: DOCTORAL LEVEL. MSJJP.

MSJJPO Jazz Piano
1-3 credits  Fall & Spring Semester
Development of an individual voice and style. Composition in the solo piano and trio format: orchestrational techniques on the piano as derived from orchestra and big band, discussion of form and structure.
PREREQUISITE: DOCTORAL LEVEL. MSJJP.

MSJJPP Jazz Piano
1-3 credits  Fall & Spring Semester
Development of an individual voice and style. Composition in the solo piano and trio format: orchestrational techniques on the piano as derived from orchestra and big band, discussion of form and structure.
PREREQUISITE: DOCTORAL LEVEL. MSJJP.

MSJJPO Jazz Piano
1-3 credits  Fall & Spring Semester
Development of an individual voice and style. Composition in the solo piano and trio format: orchestrational techniques on the piano as derived from orchestra and big band, discussion of form and structure.
PREREQUISITE: DOCTORAL LEVEL. MSJJP.
MSJJPR Jazz Piano
1- 3 credits  Fall & Spring Semester
Development of an individual voice and style. Composition in the solo piano and trio format: orchestral techniques on the piano as derived from orchestra and big band, discussion of form and structure.
PREREQUISITE: DOCTORAL LEVEL. MSJ JPQ.

MSJJSI Jazz Saxophone
1- 3 credits  Fall & Spring Semester
The graduate student will be encouraged to seek further refinement in all areas, including tone, intonation, technique, stylistic interpretation, improvisation, as well as be thoroughly versed in the pedagogy of the instrument. Specific jazz improvisation topics may include advanced forms, non-traditional harmony, traditional harmony in twelve keys, advanced rhythmic meters and subdivisions, balancing melodic/harmonic/rhythmic elements, approaches to non-structured "free" forms, and expansion of the repertoire. Related areas may also be addressed within the private lesson format, such as composition, doubling, and keyboard skills.
PREREQUISITE: MASTER'S LEVEL. BY AUDITION.

MSJJSJ Jazz Saxophone
1- 3 credits  Fall & Spring Semester
The graduate student will be encouraged to seek further refinement in all areas, including tone, intonation, technique, stylistic interpretation, improvisation, as well as be thoroughly versed in the pedagogy of the instrument. Specific jazz improvisation topics may include advanced forms, non-traditional harmony, traditional harmony in twelve keys, advanced rhythmic meters and subdivisions, balancing melodic/harmonic/rhythmic elements, approaches to non-structured "free" forms, and expansion of the repertoire. Related areas may also be addressed within the private lesson format, such as composition, doubling, and keyboard skills.
PREREQUISITE: MASTER'S LEVEL. MSJ JSI.

MSJJSK Jazz Saxophone
1- 3 credits  Fall & Spring Semester & First & Second Summer Session
The graduate student will be encouraged to seek further refinement in all areas, including tone, intonation, technique, stylistic interpretation, improvisation, as well as be thoroughly versed in the pedagogy of the instrument. Specific jazz improvisation topics may include advanced forms, non-traditional harmony, traditional harmony in twelve keys, advanced rhythmic meters and subdivisions, balancing melodic/harmonic/rhythmic elements, approaches to non-structured "free" forms, and expansion of the repertoire. Related areas may also be addressed within the private lesson format, such as composition, doubling, and keyboard skills.
PREREQUISITE: MASTER'S LEVEL. MSJ JSJ.

MSJJSL Jazz Saxophone
1- 3 credits  Fall & Spring Semester
The graduate student will be encouraged to seek further refinement in all areas, including tone, intonation, technique, stylistic interpretation, improvisation, as well as be thoroughly versed in the pedagogy of the instrument. Specific jazz improvisation topics may include advanced forms, non-traditional harmony, traditional harmony in twelve keys, advanced rhythmic meters and subdivisions, balancing melodic/harmonic/rhythmic elements, approaches to non-structured "free" forms, and expansion of the repertoire. Related areas may also be addressed within the private lesson format, such as composition, doubling, and keyboard skills.
PREREQUISITE: MASTER'S LEVEL. MSJ JSK.
MSJJSM Jazz Saxophone
1-3 credits    Fall & Spring Semester
The graduate student will be encouraged to seek further refinement in all areas, including tone, intonation, technique, stylistic interpretation, improvisation, as well as be thoroughly versed in the pedagogy of the instrument. Specific jazz improvisation topics may include advanced forms, non-traditional harmony, traditional harmony in twelve keys, advanced rhythmic meters and subdivisions, balancing melodic/harmonic/rhythmic elements, approaches to non-structured "free" forms, and expansion of the repertoire. Related areas may also be addressed within the private lesson format, such as composition, doubling, and keyboard skills.
PREREQUISITE: DOCTORAL LEVEL. BY AUDITION.

MSJJSN Jazz Saxophone
1-3 credits    Fall & Spring Semester
The graduate student will be encouraged to seek further refinement in all areas, including tone, intonation, technique, stylistic interpretation, improvisation, as well as be thoroughly versed in the pedagogy of the instrument. Specific jazz improvisation topics may include advanced forms, non-traditional harmony, traditional harmony in twelve keys, advanced rhythmic meters and subdivisions, balancing melodic/harmonic/rhythmic elements, approaches to non-structured "free" forms, and expansion of the repertoire. Related areas may also be addressed within the private lesson format, such as composition, doubling, and keyboard skills.
PREREQUISITE: DOCTORAL LEVEL. MSJ JSM.

MSJJSO Jazz Saxophone
1-3 credits    Fall & Spring Semester
The graduate student will be encouraged to seek further refinement in all areas, including tone, intonation, technique, stylistic interpretation, improvisation, as well as be thoroughly versed in the pedagogy of the instrument. Specific jazz improvisation topics may include advanced forms, non-traditional harmony, traditional harmony in twelve keys, advanced rhythmic meters and subdivisions, balancing melodic/harmonic/rhythmic elements, approaches to non-structured "free" forms, and expansion of the repertoire. Related areas may also be addressed within the private lesson format, such as composition, doubling, and keyboard skills.
PREREQUISITE: DOCTORAL LEVEL. MSJ JSN.

MSJJSP Jazz Saxophone
1-3 credits    Fall & Spring Semester
The graduate student will be encouraged to seek further refinement in all areas, including tone, intonation, technique, stylistic interpretation, improvisation, as well as be thoroughly versed in the pedagogy of the instrument. Specific jazz improvisation topics may include advanced forms, non-traditional harmony, traditional harmony in twelve keys, advanced rhythmic meters and subdivisions, balancing melodic/harmonic/rhythmic elements, approaches to non-structured "free" forms, and expansion of the repertoire. Related areas may also be addressed within the private lesson format, such as composition, doubling, and keyboard skills.
PREREQUISITE: DOCTORAL LEVEL. MSJ JSO.
MSJSQ Jazz Saxophone
1-3 credits    Fall & Spring Semester
The graduate student will be encouraged to seek further refinement in all areas, including tone, intonation, technique, stylistic interpretation, improvisation, as well as be thoroughly versed in the pedagogy of the instrument. Specific jazz improvisation topics may include advanced forms, non-traditional harmony, traditional harmony in twelve keys, advanced rhythmic meters and subdivisions, balancing melodic/harmonic/rhythmic elements, approaches to non-structured "free" forms, and expansion of the repertoire. Related areas may also be addressed within the private lesson format, such as composition, doubling, and keyboard skills.
PREREQUISITE: DOCTORAL LEVEL. MSJ JSP.

MSJSR Jazz Saxophone
1-3 credits    Fall & Spring Semester
The graduate student will be encouraged to seek further refinement in all areas, including tone, intonation, technique, stylistic interpretation, improvisation, as well as be thoroughly versed in the pedagogy of the instrument. Specific jazz improvisation topics may include advanced forms, non-traditional harmony, traditional harmony in twelve keys, advanced rhythmic meters and subdivisions, balancing melodic/harmonic/rhythmic elements, approaches to non-structured "free" forms, and expansion of the repertoire. Related areas may also be addressed within the private lesson format, such as composition, doubling, and keyboard skills.
PREREQUISITE: DOCTORAL LEVEL. MSJ JSQ.

MSJTI Jazz Trombone
1-3 credits    Fall & Spring Semester
Private lessons focus on various facets of jazz trombone performance. These include jazz and classical instrumental studies focusing on proper warm up and advanced articulation exercises. Jazz styles are researched through listening to and transcription of established jazz instrumentalists. Advanced jazz theory and jazz piano are also included. The student is required to perform and improvise at a professional level.
PREREQUISITE: MASTER’S LEVEL. BY AUDITION.

MSJTBJ Jazz Trombone
1-3 credits    Fall & Spring Semester
Private lessons focus on various facets of jazz trombone performance. These include jazz and classical instrumental studies focusing on proper warm up and advanced articulation exercises. Jazz styles are researched through listening to and transcription of established jazz instrumentalists. Advanced jazz theory and jazz piano are also included. The student is required to perform and improvise at a professional level.
PREREQUISITE: MASTER’S LEVEL. MSJ TBI.

MSJTBK Jazz Trombone
1-3 credits    Fall & Spring Semester & First & Second Summer Session
Private lessons focus on various facets of jazz trombone performance. These include jazz and classical instrumental studies focusing on proper warm up and advanced articulation exercises. Jazz styles are researched through listening to and transcription of established jazz instrumentalists. Advanced jazz theory and jazz piano are also included. The student is required to perform and improvise at a professional level.
PREREQUISITE: MASTER’S LEVEL. MSJ TBJ.
MSJTBL Jazz Trombone
1-3 credits Fall & Spring Semester
Private lessons focus on various facets of jazz trombone performance. These include jazz and classical instrumental studies focusing on proper warm up and advanced articulation exercises. Jazz styles are researched through listening to and transcription of established jazz instrumentalists. Advanced jazz theory and jazz piano are also included. The student is required to perform and improvise at a professional level.
PREREQUISITE: MASTER'S LEVEL. MSJ TBK.

MSJTB M Jazz Trombone
1-3 credits Fall & Spring Semester
Private lessons focus on various facets of jazz trombone performance. These include jazz and classical instrumental studies focusing on proper warm up and advanced articulation exercises. Jazz styles are researched through listening to and transcription of established jazz instrumentalists. Advanced jazz theory and jazz piano are also included. The student is required to perform and improvise at a professional level.
PREREQUISITE: DOCTORAL LEVEL. BY AUDITION.

MSJTN B Jazz Trombone
1-3 credits Fall & Spring Semester
Private lessons focus on various facets of jazz trombone performance. These include jazz and classical instrumental studies focusing on proper warm up and advanced articulation exercises. Jazz styles are researched through listening to and transcription of established jazz instrumentalists. Advanced jazz theory and jazz piano are also included. The student is required to perform and improvise at a professional level.
PREREQUISITE: DOCTORAL LEVEL. MSJ TBM.

MSJTO B Jazz Trombone
1-3 credits Fall & Spring Semester
Private lessons focus on various facets of jazz trombone performance. These include jazz and classical instrumental studies focusing on proper warm up and advanced articulation exercises. Jazz styles are researched through listening to and transcription of established jazz instrumentalists. Advanced jazz theory and jazz piano are also included. The student is required to perform and improvise at a professional level.
PREREQUISITE: DOCTORAL LEVEL. MSJ TBN.

MSJTP B Jazz Trombone
1-3 credits Fall & Spring Semester
Private lessons focus on various facets of jazz trombone performance. These include jazz and classical instrumental studies focusing on proper warm up and advanced articulation exercises. Jazz styles are researched through listening to and transcription of established jazz instrumentalists. Advanced jazz theory and jazz piano are also included. The student is required to perform and improvise at a professional level.
PREREQUISITE: DOCTORAL LEVEL. MSJ TBO.

MSJTBQ Jazz Trombone
1-3 credits Fall & Spring Semester
Private lessons focus on various facets of jazz trombone performance. These include jazz and classical instrumental studies focusing on proper warm up and advanced articulation exercises. Jazz styles are researched through listening to and transcription of established jazz instrumentalists. Advanced jazz theory and jazz piano are also included. The student is required to perform and improvise at a professional level.
PREREQUISITE: DOCTORAL LEVEL. MSJ TBP.
MSJTBR Jazz Trombone
1-3 credits    Fall & Spring Semester
Private lessons focus on various facets of jazz trombone performance. These include jazz and classical instrumental studies focusing on proper warm up and advanced articulation exercises. Jazz styles are researched through listening to and transcription of established jazz instrumentalists. Advanced jazz theory and jazz piano are also included. The student is required to perform and improvise at a professional level.
PREREQUISITE: DOCTORAL LEVEL. MSJ TBQ.

MSJTPJ Jazz Trumpet
1-3 credits    Fall & Spring Semester
Private lessons focus on various facets of jazz trumpet performance. These include jazz and classical instrumental studies focusing on proper warm up and advanced articulation exercises. Jazz styles are researched through listening to and transcription of established jazz instrumentalists. Advanced jazz theory and jazz piano are also included. The student is required to perform and improvise at a professional level.
PREREQUISITE: MASTER'S LEVEL. MSJ TPJ.

MSJTPL Jazz Trumpet
1-3 credits    Fall & Spring Semester
Private lessons focus on various facets of jazz trumpet performance. These include jazz and classical instrumental studies focusing on proper warm up and advanced articulation exercises. Jazz styles are researched through listening to and transcription of established jazz instrumentalists. Advanced jazz theory and jazz piano are also included. The student is required to perform and improvise at a professional level.
PREREQUISITE: MASTER'S LEVEL. MSJ TPK.

MSJTPM Jazz Trumpet
1-3 credits    Fall & Spring Semester
Private lessons focus on various facets of jazz trumpet performance. These include jazz and classical instrumental studies focusing on proper warm up and advanced articulation exercises. Jazz styles are researched through listening to and transcription of established jazz instrumentalists. Advanced jazz theory and jazz piano are also included. The student is required to perform and improvise at a professional level.
PREREQUISITE: DOCTORAL LEVEL. BY AUDITION.
MSJTPN Jazz Trumpet
1-3 credits Fall & Spring Semester
Private lessons focus on various facets of jazz trumpet performance. These include jazz and classical instrumental studies focusing on proper warm up and advanced articulation exercises. Jazz styles are researched through listening to and transcription of established jazz instrumentalists. Advanced jazz theory and jazz piano are also included. The student is required to perform and improvise at a professional level.
PREREQUISITE: DOCTORAL LEVEL MSJ TPM.

MSJTOPO Jazz Trumpet
1-3 credits Fall & Spring Semester
Private lessons focus on various facets of jazz trumpet performance. These include jazz and classical instrumental studies focusing on proper warm up and advanced articulation exercises. Jazz styles are researched through listening to and transcription of established jazz instrumentalists. Advanced jazz theory and jazz piano are also included. The student is required to perform and improvise at a professional level.
PREREQUISITE: DOCTORAL LEVEL MSJ TPN.

MSJTPP Jazz Trumpet
1-3 credits Fall & Spring Semester
Private lessons focus on various facets of jazz trumpet performance. These include jazz and classical instrumental studies focusing on proper warm up and advanced articulation exercises. Jazz styles are researched through listening to and transcription of established jazz instrumentalists. Advanced jazz theory and jazz piano are also included. The student is required to perform and improvise at a professional level.
PREREQUISITE: DOCTORAL LEVEL MSJ TPO.

MSJTPQ Jazz Trumpet
1-3 credits Fall & Spring Semester
Private lessons focus on various facets of jazz trumpet performance. These include jazz and classical instrumental studies focusing on proper warm up and advanced articulation exercises. Jazz styles are researched through listening to and transcription of established jazz instrumentalists. Advanced jazz theory and jazz piano are also included. The student is required to perform and improvise at a professional level.
PREREQUISITE: DOCTORAL LEVEL MSJ TPP.

MSJTPR Jazz Trumpet
1-3 credits Fall & Spring Semester
Private lessons focus on various facets of jazz trumpet performance. These include jazz and classical instrumental studies focusing on proper warm up and advanced articulation exercises. Jazz styles are researched through listening to and transcription of established jazz instrumentalists. Advanced jazz theory and jazz piano are also included. The student is required to perform and improvise at a professional level.
PREREQUISITE: DOCTORAL LEVEL MSJ TPQ.

MSJVOI Jazz Voice
1-3 credits Fall & Spring Semester
Private studio vocal study at the master of music graduate level devoted to the continued development of skills and repertoire with particular attention to discovering and nurturing the individual student's artistic direction.
PREREQUISITE: MASTER'S LEVEL. BY AUDITION.
MSJVOJ Jazz Voice  
1- 3 credits  Fall & Spring Semester  
Private studio vocal study at the master of music graduate level devoted to the continued development of skills and repertoire with particular attention to discovering and nurturing the individual student's artistic direction.  
PREREQUISITE: MASTER'S LEVEL. MSK VOI.

MSJVOK Jazz Voice  
1- 3 credits  Fall & Spring Semester & First & Second Summer Session  
Private studio vocal study at the master of music graduate level devoted to the continued development of skills and repertoire with particular attention to discovering and nurturing the individual student's artistic direction.  
PREREQUISITE: MASTER'S LEVEL. MSJ VOJ.

MSJVOL Jazz Voice  
1- 3 credits  Fall & Spring Semester  
Private studio vocal study at the master of music graduate level devoted to the continued development of skills and repertoire with particular attention to discovering and nurturing the individual student's artistic direction.  
PREREQUISITE: MASTER'S LEVEL. MSJ VOK.

MSJVOM Jazz Voice  
1- 3 credits  Fall & Spring Semester  
Private studio vocal coaching at the doctoral level devoted to refining all skills, technique, and repertoire for professional performance and pedagogy.  
PREREQUISITE: DOCTORAL LEVEL. BY AUDITION.

MSJVON Jazz Voice  
1- 3 credits  Fall & Spring Semester  
Private studio vocal coaching at the doctoral level devoted to refining all skills, technique, and repertoire for professional performance and pedagogy.  
PREREQUISITE: DOCTORAL LEVEL. MSJ VOM.

MSJVOO Jazz Voice  
1- 3 credits  Fall & Spring Semester  
Private studio vocal coaching at the doctoral level devoted to refining all skills, technique, and repertoire for professional performance and pedagogy.  
PREREQUISITE: DOCTORAL LEVEL. MSJ VON.

MSJVOP Jazz Voice  
1- 3 credits  Fall & Spring Semester  
Private studio vocal coaching at the doctoral level devoted to refining all skills, technique, and repertoire for professional performance and pedagogy.  
PREREQUISITE: DOCTORAL LEVEL. MSJ VOO.

MSJVOQ Jazz Voice  
1- 3 credits  Fall & Spring Semester  
Private studio vocal coaching at the doctoral level devoted to refining all skills, technique, and repertoire for professional performance and pedagogy.  
PREREQUISITE: DOCTORAL LEVEL. MSJ VOP.
MSJVOR Jazz Voice
1-3 credits  Fall & Spring Semester
Private studio vocal coaching at the doctoral level devoted to refining all skills, technique, and repertoire for professional performance and pedagogy.
PREREQUISITE: DOCTORAL LEVEL MSJ VOQ.

MSJ509 Jazz Composition I
2 credits  Fall Semester
Application of advanced composition techniques to various contemporary Jazz styles making extensive use of analysis of established compositions. Emphasis is placed on small group performance.
PREREQUISITE: MTC 211 OR MTC 240

MSJ510 Jazz Composition II
2 credits  Spring Semester
This course is a continuation of MSJ 500 with an emphasis on melody writing, reharmonization techniques, pentatonic/blues composition, and an introduction to advanced harmonic materials.

MSJ516 Jazz Vocal Arranging
2 credits  Spring Semester
Analysis and techniques of jazz vocal writing.

MSJ519 Advanced Modern Arranging I
3 credits  Fall Semester
Advanced arranging and composition for the Jazz and studio ensemble.

MSJ520 Advanced Modern Arranging II
3 credits  Spring Semester
Advanced arranging and composition for the Jazz and studio ensemble.

MSJ521 Advanced Modern Arranging III
3 credits  Spring Semester
Course addresses scoring for large jazz ensemble, utilizing chord scale voicings and line writing techniques. Emphasis is placed on orchestration styles such as Duke Ellington, Gil Evans, and Thad Jones.

MSJ522 Introduction to Midi Sequencing and Digital Workstations
2 credits  Fall & Spring Semester
An introduction to Midi Sequencing with hands-on experience working with a computer sequencing workstation. Topics include sequencing, quantizing, editing, mixing, and effects processing.
PREREQUISITE: MSJ 519/520

MSJ544 Jazz Pedagogy and Administration
3 credits  Spring Semester
The philosophy, methods, and materials of instruction pertinent to the teaching and management of a jazz and commercial curriculum at the high school and college level. Includes preparation of model curricula and supervised instruction.
PREREQUISITE: MSJ 565
MSJ560 Advanced Jazz Improvisation Theory  
3 credits  
Fall Semester  
Review of fundamentals and introduction of advanced topics in jazz harmony and scale resources for improvisation.  
PREREQUISITE: PLACEMENT AUDITION  

MSJ565 Advanced Improvisation I  
3 credits  
Spring Semester  
Use of stylistic nuance with emphasis on melodic development, complex harmonies, time-feel, and phrasing. Open only to senior or graduate majors in Studio Music and Jazz.  
PREREQUISITE: MSJ 372  

MSJ566 Advanced Improvisation II  
3 credits  
Fall Semester  
Refinement of improvisation concepts leading towards the establishment of a personal style of playing. Open only to senior or graduate majors in Studio Music and Jazz.  
PREREQUISITE: MSJ 565  

MSJ589 Jazz Accompanying  
2 credits  
Offered By Announcement Only  
A comprehensive study in accompaniment concepts for pianists/guitarists reflecting contemporary and traditional jazz styles.  

MSJ593 Special Topics MSJ  
1- 3 credits  
Fall & Spring Semester  
Supervised topics and other activities in specific areas of Studio Music and Jazz.  
PREREQUISITE: DEAN'S APPROVAL AND SIGNATURE REQUIRED  

MSJ603 Jazz Piano Class I  
1 credit  
Fall & Spring Semester  
Group instruction in the various styles of contemporary jazz. Graduate students will acquire improvisational skills while learning repertoire and performance techniques, and strengthen compositional and arranging skills by contributing original compositions and arrangements to the ensemble's repertoire.  
PREREQUISITE: PLACEMENT AUDITION.  

MSJ604 Jazz Piano Class II  
1 credit  
Fall & Spring Semester  
Group instruction in the various styles of contemporary jazz. Graduate students will acquire improvisational skills while learning repertoire and performance techniques, and strengthen compositional and arranging skills by contributing original compositions and arrangements to the ensemble's repertoire.  
PREREQUISITE: MSJ 603 OR PLACEMENT AUDITION.  

MSJ605 Jazz Piano Class III  
1 credit  
Fall & Spring Semester  
Group instruction in the various styles of contemporary jazz. Graduate students will acquire improvisational skills while learning repertoire and performance techniques, and strengthen compositional and arranging skills by contributing original compositions and arrangements to the ensemble's repertoire.  
PREREQUISITE: MSJ 604 OR PLACEMENT AUDITION.
MSJ606 Jazz Piano Class IV
1 credit  Fall & Spring Semester
Group instruction in the various styles of contemporary jazz. Graduate students will acquire improvisational skills while learning repertoire and performance techniques, and strengthen compositional and arranging skills by contributing original compositions and arrangements to the ensemble's repertoire.
PREREQUISITE: MSJ 605 OR PLACEMENT AUDITION.

MSJ614 Advanced Orchestration
3 credits  Fall Semester
Techniques for scoring for the modern symphony orchestra.
PREREQUISITE: MSJ 519, 520, MTC 416 OR BY PERMISSION OF INSTRUCTOR.

MSJ615 Jazz Composition Seminar I
2 credits  Fall Semester
Creative work in Jazz Composition.

MSJ620 Analysis of Jazz Styles
3 credits  Fall Semester
A comparative study of Jazz styles from 1900 to the present.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MSJ627 Jazz Rhythm Section Techniques
1 credit  Offered By Announcement Only
A jazz ensemble for piano, bass, drums, and horns that offers advanced concepts in small group interactive performance.
PREREQUISITE: MSJ MAJORS OR PERMISSION OF INSTRUCTOR.

MSJ634 E.C.M. Ensemble
1 credit  Fall & Spring Semester
This ensemble performs music typical of the contemporary European jazz styles such as those characterized by the Edition of Contemporary Music (E.C.M.) Recording Company.
PREREQUISITE: AUDITION.

MSJ638 Vocal Recording Ensemble
1 credit  Fall & Spring Semester
Weekly recording sessions and instruction in recording studio performance techniques including skill training in sight reading, vocal production, and diction applied to group and solo singing styles.
PREREQUISITE: BY AUDITION.

MSJ639 Small Jazz Vocal Ensemble
1 credit  Fall & Spring Semester
Small groups of vocalists with a rhythm section, dedicated to a particular style and body of literature.
PREREQUISITE: BY AUDITION.
MSJ640 Small Jazz Ensemble
1 credit
Fall & Spring Semester
Group instruction in the various styles of contemporary jazz. Students will acquire improvisational skills while learning repertoire and performance techniques leading to an advanced performance level. This course will strengthen compositional and arranging skills as students must contribute original compositions and arrangements to the ensemble's repertoire.
PREREQUISITE: BY AUDITION.

MSJ641 Small Jazz Ensemble I
1 credit
Fall & Spring Semester
Group instruction in the various styles of contemporary jazz. Students will acquire improvisational skills while learning repertoire and performance techniques leading to an advanced performance level. This course will strengthen compositional and arranging skills as students must contribute original compositions and arrangements to the ensemble's repertoire.

MSJ642 Small Jazz Ensemble II
1 credit
Fall & Spring Semester
Group instruction in the various styles of contemporary jazz. Students will acquire improvisational skills while learning repertoire and performance techniques leading to an advanced performance level. This course will strengthen compositional and arranging skills as students must contribute original compositions and arrangements to the ensemble's repertoire.

MSJ643 Small Jazz Ensemble III
1 credit
Fall & Spring Semester
Group instruction in the various styles of contemporary jazz. Students will acquire improvisational skills while learning repertoire and performance techniques leading to an advanced performance level. This course will strengthen compositional and arranging skills as students must contribute original compositions and arrangements to the ensemble's repertoire.

MSJ644 Small Jazz Ensemble IV
1 credit
Fall & Spring Semester
Group instruction in the various styles of contemporary jazz. Students will acquire improvisational skills while learning repertoire and performance techniques leading to an advanced performance level. This course will strengthen compositional and arranging skills as students must contribute original compositions and arrangements to the ensemble's repertoire.

MSJ645 Small Jazz Ensemble V
1 credit
Fall & Spring Semester
Group instruction in the various styles of contemporary jazz. Students will acquire improvisational skills while learning repertoire and performance techniques leading to an advanced performance level. This course will strengthen compositional and arranging skills as students must contribute original compositions and arrangements to the ensemble's repertoire.
MSJ646 Small Jazz Ensemble VI
1 credit  Fall & Spring Semester
Group instruction in the various styles of contemporary jazz. Students will acquire improvisational skills while learning repertoire and performance techniques leading to an advanced performance level. This course will strengthen compositional and arranging skills as students must contribute original compositions and arrangements to the ensemble's repertoire.

MSJ647 Small Jazz Ensemble VII
1 credit  Fall & Spring Semester
Group instruction in the various styles of contemporary jazz. Students will acquire improvisational skills while learning repertoire and performance techniques leading to an advanced performance level. This course will strengthen compositional and arranging skills as students must contribute original compositions and arrangements to the ensemble's repertoire.

MSJ650 Studio Jazz Band
1 credit  Fall & Spring Semester
This ensemble performs music in the recent big band tradition, from leaders such as Duke Ellington, Count Basie, Buddy Rich, Bob Brookmeyer, and Thad Jones. The group performs on campus with an emphasis on studio recording.
PREREQUISITE: BY AUDITION.

MSJ651 Concert Jazz Band
1 credit  Fall & Spring Semester
The Concert Jazz Band is the premiere big band at the Frost School of Music. Students are required to perform at an advanced level, and work with a variety of guest artists. Requirements include the ability to sight read difficult material, and to improvise in various styles. Audition is required.
PREREQUISITE: BY AUDITION.

MSJ653 Jazz Band III
1 credit  Fall & Spring Semester
Big Band designed for graduate students needing experience with classic Big Band repertory.
PREREQUISITE: BY AUDITION.

MSJ655 Monk/Mingus Ensemble
1 credit  Fall Semester
This ensemble is dedicated to the study and performance of the music of the influential jazz composers Charles Mingus and Thelonius Monk.
PREREQUISITE: BY AUDITION.

MSJ656 Funk/Fusion Ensemble
1 credit  Fall & Spring Semester
Small jazz ensemble focusing on contemporary electric jazz/rock/fusion/Latin styles. Emphasis is placed on original compositions by the members of the ensemble. The most common instrumentation is bass, drums, piano/synthesizer, guitar, and saxophone.
PREREQUISITE: AUDITION.

MSJ657 Horace Silver Ensemble
1 credit  Spring Semester
This ensemble is dedicated to the study and performance of the music of Horace Silver.
PREREQUISITE: AUDITION.
MSJ658 Bebop Ensemble
1 credit  Fall & Spring Semester
This is the top instrumental small group and performs frequently both locally and nationally. The ensemble performs exclusively original compositions provided by the members of the group. The styles presented are varied and based on the interests of the participants, but include bebop, blues and world music.
PREREQUISITE: BY AUDITION.

MSJ659 Rhythm and Blues Ensemble
1 credit  Fall & Spring Semester
Mid-level ensemble for both instrumentalists and vocalists designed to familiarize students with classic Rhythm and Blues material from the 50s, 60s, and 70s, while preparing for a series of concerts throughout the semester. Students are guided through the process of putting a working band together and preparing it for performances and recordings, including what is expected of and from instruments, vocalists, producers, promoters, and other industry personnel.

MSJ660 Avant Garde Ensemble
1 credit  Fall & Spring Semester
This ensemble offers students the opportunity to develop the "free form" improvisation in either the bebop based style of Ornette Coleman or the fusion oriented style as typified by Bill Laswell.
PREREQUISITE: AUDITION.

MSJ661 Electric Bass Ensemble
1 credit  Fall & Spring Semester
This is a 2 hour weekly ensemble that develops a thorough foundation in basic techniques and bass line creation. The fall semester concentrates on the acoustic bass and related styles. The spring semester focuses on the electric bass.
PREREQUISITE: BY AUDITION.

MSJ662 Jazz Saxophone Ensemble
1 credit  Fall & Spring Semester
An intermediate level reading ensemble comprised of five saxophones and rhythm section, designed to reinforce fundamental principles of playing in the typical big band saxophone section. Skills addressed include sight-reading, blend, intonation, phrasing, rhythmic accuracy, etc. Rhythm section players gain reading experience and learn the basics of providing a foundation for big band type arrangements. Repertoire includes both published and selected original charts from student arrangers.
PREREQUISITE: BY AUDITION.

MSJ664 Contemporary Rhythm Section Techniques I
1 credit  Fall Semester
This is an ensemble for freshmen rhythm section players. The focus of this ensemble is to introduce students to various styles of rhythm section playing--from swing and modern Jazz through Rock, Funk, R&B, and other commercial styles of music. Concepts of sound, groove, balance and blend, repertory, and accompaniment are also discussed.

MSJ665 Contemporary Rhythm Section Techniques II
1 credit  Spring Semester
Fundamentals of rhythm section playing for guitarists, pianists, bassists, and drummers. It covers a variety of contemporary styles within the rock, jazz, Latin, and pop idioms. Students are grouped into ensembles which perform in class weekly.
PREREQUISITE: BY AUDITION.
MSJ666 Small Jazz Ensemble Lab  
0 credit  Fall & Spring Semester  
Performance Lab designed to work in conjunction with all of the 140 level ensembles. Provides and environment in which students are required to perform on a regular rotating schedule throughout the semester. These performances are critiqued by the institution and other faculty, as well as students, in order to nurture a critical but positive atmosphere.  
PREREQUISITE: BY AUDITION.

MSJ667 Salsa Ensemble  
1 credit  Spring Semester  
An ensemble of instrumentalists and singers performing a wide variety of Salsa and Latin jazz styles with emphasis on improvisation.

MSJ669 Jazz Guitar Ensemble I  
1 credit  Fall & Spring Semester  
A small instrumental ensemble comprised of five electric guitars which perform with bass and drums in a wide variety of contemporary jazz styles.  
PREREQUISITE: BY AUDITION.

MSJ670 Jazz Guitar Ensemble II  
1 credit  Fall & Spring Semester  
A small instrumental ensemble comprised of five electric guitars which perform with bass and drums in a wide variety of contemporary jazz styles.  
PREREQUISITE: BY AUDITION.

MSJ671 Jazz Guitar Ensemble III  
1 credit  Fall & Spring Semester  
A small instrumental ensemble comprised of five electric guitars which perform with bass and drums in a wide variety of contemporary jazz styles.  
PREREQUISITE: BY AUDITION.

MSJ672 Jazz Guitar Ensemble (Workshop I)  
1 credit  Fall & Spring Semester  
A small instrumental reading ensemble, comprised of four to eight electric guitars, which studies a variety of contemporary jazz styles.  
PREREQUISITE: BY AUDITION.

MSJ673 Jazz Guitar Ensemble (Workshop II)  
1 credit  Offered By Announcement Only  
A small instrumental reading ensemble, comprised of four to eight electric guitars, which studies a variety of contemporary jazz styles.  
PREREQUISITE: BY AUDITION.

MSJ675 Jazz Writing Ensemble  
1 credit  Offered By Announcement Only  
This class is a seminar in jazz arranging and composition techniques for Studio/Jazz Writing master's students and DMA students in Jazz Composition. The class consists primarily of topics related to jazz and studio arranging and composition, recording techniques, rehearsal techniques, music technologies, music business, and entrepreneurship. Topics are examined utilizing hands-on technology, score analysis, listening, guest lectures, and long range projects.  
PREREQUISITE: PERMISSION OF INSTRUCTOR.
STUDIO MUSIC & JAZZ

MSJ693 Special Projects
1-3 credits  Fall & Spring Semester & First & Second Summer Session
Projects in any phase of studio music and jazz in which the student is interested and qualified to work.
PREREQUISITE: GRADUATE MUSIC STUDENTS ONLY. DEAN’S APPROVAL AND SIGNATURE REQUIRED.

MSJ694 Special Projects
1-3 credits  Fall & Spring Semester & First & Second Summer Session
Projects in any phase of studio music and jazz in which the student is interested and qualified to work.
PREREQUISITE: GRADUATE MUSIC STUDENTS ONLY. DEAN’S APPROVAL AND SIGNATURE REQUIRED.

MSJ695 Jazz Vocal Ensemble I
1 credit  Fall & Spring Semester
A choir of 12 to 16 voices, with rhythm section, which perform a wide variety of jazz and pop styles.
PREREQUISITE: PERMISSION OF CONDUCTOR.

MSJ696 Jazz Vocal Ensemble II
1 credit  Fall & Spring Semester
A choir of 12 to 16 voices, with rhythm section, which perform a wide variety of jazz and pop styles.
PREREQUISITE: PERMISSION OF CONDUCTOR.

MSJ697 Jazz Vocal Ensemble III
1 credit  Fall & Spring Semester
A choir of 12 to 16 voices, with rhythm section, which perform a wide variety of jazz and pop styles.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

MSJ711 Master's Recital Paper
1-3 credits  Fall & Spring Semester & First & Second Summer Session
The student working on his/her recital paper enrolls for credit as determined by his/her advisor. Credit is not awarded until the paper has been accepted.

MSJ712 Master's Recital
1 credit  Fall & Spring Semester
The student enrolls for recital credit during the semester in which he/she presents the master's recital.

MSJ713 Master's Jazz Writing Project
1-3 credits  Fall & Spring Semester & First & Second Summer Session
The student working on his/her master's jazz writing project enrolls for credit as determined by his/her advisor. Credit is not awarded until the project paper is accepted.

MSJ720 Research in Residence
0 credit  Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in MSJ 710 (usually six credits). Credit not granted. May be regarded as full time residence.
MSJ731 Doctoral Essay
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Required of all candidates of the D.M.A. The student will enroll for credit as determined by his/her advisor, but not for less than a total of 12. Not more than 12 hours of MSJ 731 may be taken in a regular semester, nor more than six in a summer session.

MSJ732 Doctoral Recital
1 credit                                                     Fall & Spring Semester
A formal recital displaying improvisational, interactive, and compositional skills appropriate to the doctoral level.

MSJ750 Research in Residence
0 credit                     Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the D.M.A., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.

VOCAL PERFORMANCE

MVPCDI Conducting
1- 4 credits    Fall & Spring Semester
PREREQUISITE: MASTER'S LEVEL. BY AUDITION.

MVPCDJ Conducting
1- 4 credits    Fall & Spring Semester
PREREQUISITE: MASTER'S LEVEL. MVPCDI.

MVPCDK Conducting
1- 4 credits    Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: MASTER'S LEVEL. MVPCDJ.

MVPCDL Conducting
1- 4 credits    Fall & Spring Semester
PREREQUISITE: MASTER'S LEVEL. MVPCDK.

MVPCDM Conducting
1- 4 credits    Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. BY AUDITION.

MVPCDN Conducting
1- 4 credits    Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MVPCDM.

MVPCDO Conducting
1- 4 credits    Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MVPCDN.

MVPCDP Conducting
1- 4 credits    Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MVPCDO.

MVPCDQ Conducting
1- 4 credits    Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MVPCDQ.
VOCAL PERFORMANCE

MVPCDR Conducting
1-4 credits Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MVP CDQ.

MVPVOI Voice
1-4 credits Fall & Spring Semester
Private lessons for providing progress towards establishing an efficient and balanced concept of posture, breath management, phonation, resonance with clarity of articulation in required languages, the ability to sustain a professional sound in the upper register and perform with established skills for vocal, physical and emotional communication in voice juries and performances of concert and opera, and the potential for a professional career as a classical singer.
PREREQUISITE: MASTER'S LEVEL. MVP VOI.

MVPVOJ Voice
1-4 credits Fall & Spring Semester
PREREQUISITE: MASTER'S LEVEL. MVP VOJ.

MVPVOK Voice
1-4 credits Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: MASTER'S LEVEL. MVP VOJ.

MVPVOL Voice
1-4 credits Fall & Spring Semester
PREREQUISITE: MASTER'S LEVEL. MVP VOK.

MVPVOM Voice
1-4 credits Fall & Spring Semester
Private lessons for providing progress towards establishing an efficient and balanced concept of posture, breath management, phonation, resonance with clarity of articulation and workable knowledge of required languages, the ability to sustain a professional sound in the upper register and perform with advanced skills for vocal, physical and emotional communication in voice juries and performances of concert and opera, and the potential for a professional career as a classical singer and/or teacher of music.
PREREQUISITE: DOCTORAL LEVEL. MVP VOM.

MVPVON Voice
1-4 credits Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MVP VON.

MVPVOP Voice
1-4 credits Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MVP VOP.

MVPVQQ Voice
1-4 credits Fall & Spring Semester
PREREQUISITE: DOCTORAL LEVEL. MVP VQQ.
MVPVOR Voice
1-4 credits  Fall Semester
PREREQUISITE: DOCTORAL LEVEL. MVP VOQ.

MVP508 Choral Score Study
2 credits  Fall Semester
In depth study of selected choral or choral/orchestral works related to literature being performed by university ensembles during the academic year.

MVP538 Vocal Pedagogy
2-3 credits  Fall Semester
Course covers methods and concepts in the teaching of singing. Emphasis is placed on psychological, physiological, and acoustical principles involved in voice production with practical application, observing and teaching individual and class voice in a supervised environment.
PREREQUISITE: SENIOR STANDING IN MUSIC

MVP552 Vocal Performance Preparation
1 credit  Fall & Spring Semester
Musical preparation of a wide range of assigned vocal literature from all periods for performance in forums, juries, and recitals. Special emphasis is on musical values, styles, translations of texts, diction, pronunciation of Italian, German, French, and English, and memorization.

MVP580 Opera Production
1 credit  Fall & Spring Semester
Opera production for main stage production, scenes, and other productions. Open only to students that are cast in productions, as determined by audition and faculty decision. Typically taken by vocal performance majors.

MVP588 Voice Performance in Salzburg, Austria
2-4 credits  First & Second Summer Session
Course is conducted at Salzburg College, Austria. Students receive comprehensive and intensive vocal training from University of Miami faculty as well as distinguished guest artists. A class in vocal repertoire is also included.

MVP593 Special Topics MVP
1-3 credits  Fall & Spring Semester
Supervised topics and other activities in specific areas of Vocal Performance.
PREREQUISITE: DEAN’S APPROVAL AND SIGNATURE REQUIRED

MVP610 Vocal Literature for Teaching: English
1 credit  Fall Semester
Study of the historical body of English language vocal repertoire as it relates to voice classification, age, and technical development of a singer.
PREREQUISITE: COMPLETION OF BASIC COURSE IN VOCAL PEDAGOGY

MVP611 Vocal Literature for Teaching: Italian
1 credit  Spring Semester
Study of the historical body of Italian vocal repertoire as it relates to voice classification, age, and technical development of a singer.
PREREQUISITE: MVP 251 OR THE EQUIVALENT AND THE COMPLETION OF A BASIC COURSE IN VOCAL PEDAGOGY
MVP612 Vocal Literature for Teaching: German
1 credit Fall Semester
Study of the historical body of German vocal repertoire as it relates to voice classification, age, and technical development of a singer.
PREREQUISITE: MVP 252 OR THE EQUIVALENT AND THE COMPLETION OF A BASIC COURSE IN VOCAL PEDAGOGY

MVP613 Vocal Literature for Teaching: French
1 credit Spring Semester
Study of the historical body of French vocal repertoire as it relates to voice classification, age, and technical development of a singer.
PREREQUISITE: MVP 253 OR THE EQUIVALENT AND THE COMPLETION OF A BASIC COURSE IN VOCAL PEDAGOGY

MVP630 Studio Teaching Techniques
1 credit Fall Semester
Application of the principles studied in MVP 638. Candidates will be assigned students for applied voice study, under supervision of the instructor.
PREREQUISITE: MVP 638 OR KEYBOARD PROFICIENCY.

MVP632 Teaching the Singer Actor
2 credits Spring Semester
Exploring teaching techniques for developing the skills of the singer.
PREREQUISITE: MVP 638.

MVP636 Voice Disorders
2 credits Spring Semester
Assessment and treatment of the human voice. Course promotes an understanding of the terminology, clinical assessment, and therapy protocols used in treating the dysfunctional or damaged voice.
PREREQUISITE: MVP 638 OR INSTRUCTOR PERMISSION

MVP638 Advanced Vocal Pedagogy
3 credits Fall Semester
Course addresses advanced methods and concepts in the teaching of singing. Emphasis is placed on psychological, physiological, and acoustical principles involved in voice production; historical perspectives; and comparative pedagogical publications. Includes practical application, observation and teaching individual and class voice in a supervised environment.
PREREQUISITE: UNDERGRADUATE CREDIT IN MVP 438, TRANSFERRABLE EQUIVALENT, OR PERMISSION OF THE INSTRUCTOR.

MVP639 Vocal Pedagogy Internship
1 credit Fall Semester
Observation in the field of choice, including, but not limited to studio work, medical setting or speech pathology setting.
PREREQUISITE: MVP 638 OR PERMISSION OF INSTRUCTOR.

MVP647 Men’s Chorale
1 credit Fall & Spring Semester
This ensemble is open to the entire university community. Students will work on all aspects of choral singing, including skills in basic musicianship. This ensemble presents two or three concerts per semester.
MVP648 Women's Chorale
1 credit  Fall & Spring Semester
This ensemble is open to the entire university community. Students will work on all aspects of choral singing, including skills in basic musicianship. This ensemble presents two or three concerts per semester.

MVP650 English Diction for Singers
1 credit  Fall Semester
Class designed for voice majors and principals, with a focus on the development of pronunciation skills for teaching and singing in English. International Phonetic Alphabet is presented as a learning tool.

MVP651 Italian Diction for Singers
1 credit  Spring Semester
Class designed for voice majors and principals, with a focus on the development of pronunciation skills for teaching in Italian and Latin. International Phonetic Alphabet is presented as a learning tool.
PREREQUISITE: MVP 650.

MVP652 German Diction for Singers
1 credit  Fall Semester
Class designed for voice majors and principals, with a focus on the development of pronunciation skills for teaching and singing in German. International Phonetic Alphabet is used as a learning tool.
PREREQUISITE: MVP 650.

MVP653 French Diction for Singers
1 credit  Spring Semester
Class designed for voice majors and principals, with a focus on the development of pronunciation skills for teaching and singing in French. International Phonetic Alphabet is used as a learning tool.
PREREQUISITE: MVP 650.

MVP672 Choral Conducting: Major Work Emphasis
1 credit  Fall Semester
Course focus is placed on major choral-orchestral works with particular emphasis on two or three major works. In addition, conductors preparation for choral-orchestral works, including instrument transportation, score preparation, musical line, historical context, and score marking. are included.
PREREQUISITE: DMA/MM IN CHORAL CONDUCTING STUDENT OR BY PERMISSION OF THE INSTRUCTOR.

MVP673 Choral Conducting Workshop: Smaller Choral Works
1 credit  Fall Semester
Study of smaller choral works by Poulenc, Hindemith, Ravel, Debussy, Brahms, Mendelssohn, Schubert, Schumann, etc., with emphasis on style, interpretation, and gesture.

MVP680 Symphonic Choir
1 credit  Fall & Spring Semester
Study and performance of choral literature appropriate for large choir, including choral orchestral masterworks.
PREREQUISITE: BY AUDITION
MVP684 Chamber Singers
1 credit  Fall & Spring Semester
An ensemble of eighteen to twenty undergraduate and graduate students. The ensemble performs challenging chamber choir repertoire from the Renaissance through the Twentieth Century.
PREREQUISITE: BY AUDITION.

MVP685 UM Chorale
1 credit  Fall & Spring Semester
This ensemble performs significant choral literature with an emphasis on music of the Twentieth-Century and on choral/orchestral works including opera. Open to all qualified graduate students, regardless of major.
PREREQUISITE: BY AUDITION.

MVP688 Opera Theater
1 credit  Fall & Spring Semester
Taken by Graduate Students in Vocal Performance. The preparation and public performance of staged operatic scenes and operas with supplemental classes in acting skills, stage movement and characterization.

MVP693 Special Projects
1- 3 credits  Fall & Spring Semester
Projects in any phase of vocal performance in which the student is interested and qualified to work. Prerequisite: Graduate Music students only. Dean's approval and signature required.
PREREQUISITE: GRADUATE MUSIC STUDENTS ONLY. DEAN'S APPROVAL AND SIGNATURE REQUIRED.

MVP694 Special Projects
1- 3 credits  Fall & Spring Semester
Projects in any phase of vocal performance in which the student is interested and qualified to work.
PREREQUISITE: GRADUATE MUSIC STUDENTS ONLY. DEAN'S APPROVAL AND SIGNATURE REQUIRED.

MVP711 Master's Recital Paper
1- 3 credits  Fall & Spring Semester & First & Second Summer Session
The student working on his/her recital paper enrolls for credit as determined by his/her advisor. Credit is not awarded until the paper has been accepted.

MVP712 Master's Recital
1 credit  Fall & Spring Semester
The student enrolls for recital credit during the semester in which he/she presents the master's recital.

MVP714 Artist Diploma Recital
1 credit  Fall & Spring Semester
The student enrolls for recital credit during the semester in which he/she presents the Artist Diploma Recital.

MVP720 Research in Residence
0 credit  Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in MVP 710 (usually six credits). Credit not granted. May be regarded as full time residence.
MVP731 Doctoral Essay
1-12 credits  Fall & Spring Semester & First & Second Summer Session
Required of all candidates for the D.M.A. The student will enroll for credit as
determined by his/her advisor, but not for less than a total of 12. Not more than
12 hours of MVP 731 may be taken in a regular semester, nor more than six in a
summer session.

MVP732 Doctoral Recital
1-2 credits  Fall & Spring Semester
Required of all candidates for the D.M.A.

MVP750 Research in Residence
0 credit  Fall & Spring Semester & First & Second Summer Session
Used to establish research in residence for the Ph.D. and D.M.A., after the student
has been enrolled for the permissible cumulative total in appropriate doctoral
research. Credit not granted. May be regarded as full-time residence as determined
by the Dean of the Graduate School.
HST536 U.S. Health Care Crisis: Politics and Policies  
3 credits  
Spring Semester  
This course will explore key health policy issues within the U.S., along with the 
politics and interest groups which shape them. Fundamental concerns within the 
health care system such as: cost, quality and access to care will be analyzed. 
Major topics of discussion will include: Medicare, Medicaid, private insurance, 
the nursing shortage, and prescription drugs. The politics and policies surrounding 
issues such as bioethics, globalization, and infectious disease will also be considered. 
PREREQUISITE: JUNIORS AND SENIORS ONLY (JUNIORS MUST HAVE JUNIOR STANDING THE SEMESTER 
THEY TAKE THE CLASS.)

NURSING

NUR502 Nursing in the International Context  
2-3 credits  
Offered By Announcement Only  
The concept and process of international nursing in the context of world health 
are discussed. Analysis of the role of nursing in relation to various national 
health care systems, theories of national development, and global strategies for 
international health are also included. Emphasis is placed on nursing education 
and service in various nations with a focus on less developed countries. (2-3)

NUR507 Clinical Nutrition in Nursing Practice  
2 credits  
Spring Semester  
Application of clinical nutrition in the assessment, diagnosis, planning, implementation, 
and evaluation of nursing care of multicultural clients in primary and secondary 
care settings. (2)  
PREREQUISITE: NUR 306, JUNIOR LEVEL STATUS.

NUR536 U.S. Health Care Crisis: Politics and Policies  
3 credits  
Spring Semester  
This course will explore key health policy issues within the U.S., along with the 
politics and interest groups which shape them. Fundamental concerns within the 
health care system such as: cost, quality and access to care will be analyzed. 
Major topics of discussion will include: Medicare, Medicaid, private insurance, 
the nursing shortage, and prescription drugs. The politics and policies surrounding 
issues such as bioethics, globalization, and infectious disease will also be considered. 
PREREQUISITE: JUNIORS AND SENIORS ONLY (JUNIORS MUST HAVE JUNIOR STANDING THE SEMESTER 
THEY TAKE THE CLASS.)

NUR551 Teaching and Learning Theory in Clinical Nursing Education  
3 credits  
Fall & Spring Semester  
The focus of this course is the exploration of principles and practice of teaching 
and learning integral to clinical nursing education. Identification of the role 
of the faculty in teaching students with diverse learning styles and needs within 
a variety of clinical settings.  
PREREQUISITE: EDUCATION CERTIFICATE STUDENTS. ADMISSIONS TO PROGRAM

NUR553 Methods for Clinical Nursing Education  
3 credits  
Fall & Spring Semester  
The focus of this course is the organization and management of instruction for 
clinical nursing education. Emphasis is on effective strategies for development 
of learning opportunities in diverse clinical settings.  
PREREQUISITE: NUR 551, RN, PERMISSION OF INSTRUCTOR.
NUR555 Evaluation in Clinical Nursing Education
1- 3 credits   Fall & Spring Semester
The focus of this course is the exploration of principles and practices of evaluation integral to clinical nursing education.
PREREQUISITE: NUR 551, 553 AND/OR PERMISSION OF INSTRUCTOR.

NUR558 Practicum in Clinical Nursing Education
1- 5 credits   Fall & Spring Semester
The focus of this course is laboratory and clinical application of principles of teaching and learning. Emphasis is on the operationalization of the clinical faculty role.
PREREQUISITE: NUR 551, 553, 555, AND/OR PERMISSION OF INSTRUCTOR.

NUR594 Selected Topics
0- 3 credits   Offered By Announcement Only
Sub-titles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title "Selected Topics". Also open to continuing education students. (2-3)
PREREQUISITE: PERMISSION OF INSTRUCTOR.

NUR595 Selected Topics
2- 3 credits   Offered By Announcement Only
Sub-titles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title "Selected Topics". Also open to continuing education students. (2-3)
PREREQUISITE: PERMISSION OF INSTRUCTOR.

NUR596 Selected Topics
2- 3 credits   Offered By Announcement Only
Sub-titles describing the topics to be offered will be shown in parentheses in the printed class schedule, following the title "Selected Topics". Also open to continuing education students. (2-3)
PREREQUISITE: PERMISSION OF INSTRUCTOR.

NUR601 Advanced Pharmacology
3 credits   Fall Semester
Advanced practice nursing application of pharmacological and pharmacokinetics for the purpose of selecting appropriate drug therapies for diverse populations. (3)
PREREQUISITE: GRADUATE STATUS.

NUR608 Concepts in Advanced Practice Nursing
3 credits   Spring Semester
Major concepts necessary for advanced practice nursing. Included are: major scientific theories, health and health promotion, health policy, ethical issues, epidemiology, technology in health care, and advanced practice role competencies. Specific emphasis is placed on understanding culture and cultural diversity in health care. (3:0)
PREREQUISITE: GRADUATE STATUS OR PERMISSION OF THE SONHS FACULTY.

NUR609 Professionalism in Advanced Practice Nursing
2 credits   First & Second Summer Session
Focuses on the synthesis of concepts and principles necessary to develop leaders in advanced practice nursing specialties. Emphasis is placed on the role of the advanced practice nurse for optimal delivery of health care to clients across the life span. (2:0)
PREREQUISITE: NUR 608 OR PERMISSION OF SONHS FACULTY.
NUR611 Foundations of Anesthesia Science for Nurse Anesthetists
3 credits  Fall Semester
Introduction to the application of basic sciences to nurse anesthesia. This course includes the application of principles of physics, molecular biology, biochemistry and medicinal chemistry.
PREREQUISITE: ADMISSION TO MSN PROGRAM (NURSE ANESTHESIA) OR PERMISSION OF THE FACULTY

NUR612 Physiology/Pathophysiology for Advanced Practice Nursing
3 credits  Fall Semester
Analysis of physiologic and pathophysiologic mechanisms of health and illness. (3)
PREREQUISITE: GRADUATE STATUS.

NUR613 Advanced Health Assessment and Diagnostic Reasoning
0-3 credits  Fall Semester
Emphasis on culturally sensitive comprehensive health assessment and diagnostic reasoning related to advanced nursing practice. Special emphasis is placed on advanced health assessment; including age appropriate health screenings; prenatal, pediatric, and geriatric assessment; and interpretation of basic laboratory tests and diagnostic studies utilized in advanced nursing practice. Specialty specific seminars address issues for individual tracks within advanced practice nursing. (2:1)
PREREQUISITE: GRADUATE STATUS OR PERMISSION OF SONHS FACULTY.

NUR614 Basic Concepts in Anesthesia Nursing
1-6 credits  Spring Semester
Fundamental knowledge and skills for entry into advanced practice anesthesia nursing. Concepts include essential techniques, monitoring and equipment, chemical and physical properties of anesthetic agents, and pharmacologic interventions for common problems and conditions requiring routine surgical procedures in a highly structured and guided clinical learning environment. Cultural competence and interdisciplinary anesthesia care across the lifespan is emphasized.
PREREQUISITE: NUR 601, 612, 613 OR PERMISSION OF SONHS FACULTY.

NUR615 Professional Aspects of Anesthesia Nursing
2 credits  Fall Semester
Focuses on the development and current trends in nurse anesthesia practice, education, and research. Concepts include the historical, legal, legislative, and professional role issues associated with advanced practice anesthesia nursing. Professional responsibilities, ethical issues, diversity, cultural competency, quality assurance, continuing education, and professional involvement are emphasized.
PREREQUISITE: PREREQUISITE OR COREQUISITE NUR 608.

NUR616 Pharmacology for Acute Care Nursing
3 credits  Spring Semester
Focuses on foundational pharmacologic principles and associated application to clinical practice in acute care nursing. Integration of pharmacological concepts and interventions in safe, culturally competent, and interdisciplinary acute care advanced nursing practice are emphasized.
PREREQUISITE: NUR 601 OR PERMISSION OF SONHS FACULTY.
NUR617 Pharmacology for Anesthesia Nursing
3 credits  Spring Semester
Focuses on foundational pharmacological principles and associated application to clinical practice in nurse anesthesia. Integration of pharmacological concepts and interventions in safe, culturally competent, and interdisciplinary anesthesia practice are emphasized.
PREREQUISITE: NUR 601

NUR618 Applied Nursing Informatics
2 credits  Offered By Announcement Only
Concepts of nursing informatics. Course is designed to enhance the attainment of knowledge, skills, and attitudes essential for an expert practitioner in a computerized health care environment. Emphasis is placed on nursing applications of information technology. Social, ethical, and legal issues associated with computerized health care delivery systems are also analyzed. (2)
PREREQUISITE: GRADUATE STANDING.

NUR619 Advanced Concepts of Anesthesia Nursing I
0-13 credits  First & Second Summer Session
In-depth knowledge and skills of anesthesia nursing care for a variety of common problems and conditions across anesthesia specializations. Concepts include assessment techniques, planning and pharmacologic interventions for specialty surgical procedures in a highly structured and guided clinical learning environment. Cultural competence and interdisciplinary anesthesia care across the lifespan is emphasized.
PREREQUISITE: NUR 614. PREREQUISITE OR COREQUISITE NUR 617.

NUR620 Advanced Concepts of Anesthesia Nursing II
0-14 credits  Fall Semester
In-depth knowledge and skills of highly specialized problems and conditions requiring anesthesia or surgical interventions. Concepts include assessment, techniques, planning and pharmacologic interventions for regional anesthesia, pain management, care of obstetrical patients and patients with catastrophic conditions in a highly structured and guided clinical learning environment. Cultural competence and interdisciplinary anesthesia care across the lifespan is emphasized.
PREREQUISITE: NUR 619.

NUR621 Diagnostics and Nursing Interventions for Acute Care Nursing
2 credits  Fall Semester
Selected diagnostic tests and intervention techniques essential to acute care nursing. Critical thinking and decision making related to interdisciplinary assessment of acute care patients. Cultural issues related to diagnostics and intervention.
PREREQUISITE: GRADUATE STATUS OR PERMISSION OF SONHS FACULTY.

NUR622 Acute Care Nursing of Adults I
0-4 credits  First & Second Summer Session
The first of two sequential clinical practicums designed for the development of scientific knowledge and advanced practice skills in the area of acute care nursing. Involves synthesis of concepts, knowledge and skills gained in previous courses applied to the care of the acutely ill patient. Focuses on the advanced practice of acute care nursing via the nurse practitioner/clinical nurse specialist.
PREREQUISITE: NUR 616, 621 OR PERMISSION OF SONHS FACULTY
NUR623 Primary Healthcare of Infants and Children
1- 3 credits    Spring Semester
Theoretical and clinical bases for advanced practice nursing management of infants and children. Emphasis is placed on strategies for health maintenance and prevention of health problems and management of alterations. (2:6)
PREREQUISITE: NUR 601, 612, 613 OR PERMISSION OF SONHS FACULTY.

NUR624 Health Care of the Aging Adult
0- 5 credits   Offered By Announcement Only
Development of the role of the advanced practice nurse in the health care management of the aging adult in settings ranging from primary care clinics to residential and rehabilitation including assisted living, long-term, and home care. (3:6)
PREREQUISITE: NUR 601, 612, 613, 628.

NUR626 Advanced Concepts in Gynecological Health Care for Women
2 credits                                              Offered By Announcement Only
Theoretical and clinical bases for the provision of complex gynecological care of women. Emphasis is on strategies for promotion of transcultural health care needs and management of alterations according to the advanced practice roles. (2)
PREREQUISITE: NUR 601, 613, 628

NUR627 Primary Prenatal Healthcare of Women
1- 2 credits    Spring Semester
Theoretical and clinical bases for providing primary prenatal care of women. Emphasis is on management strategies for promotion of transcultural health care needs according to the advanced practice role. (1:3)
PREREQUISITE: NUR 601, 612 AND 613

NUR628 Advanced Practice Nursing of the Adult I
0- 4 credits    Fall Semester
Theoretical and clinical bases for health care management of health alterations in the adult population. Emphasis on strategies for health maintenance and prevention of health problems, management of alterations, discharge planning and rehabilitation of individuals and aggregate population. (2:2)
PREREQUISITE: PREREQUISITE OR COREQUISITE: NUR 601, 612, 613 OR PERMISSION OF SONHS FACULTY.

NUR629 Nursing Management of Common Health Conditions of Women
3 credits                                              Offered By Announcement Only
Theoretical and clinical bases for health care management across the lifespan. This includes adolescence, childbearing, mid-life, and post menopausal adaptation to disease processes such as endocrinological, pulmonary, circulatory disorders, minor trauma, and infectious processes. (1:2)
PREREQUISITE: NUR 601, 613, 626, 627.

NUR630 Research Methods and Evidence-Based Practice
3 credits                                              Spring Semester & First & Second Summer Session
Research process, research methods, and the analysis of data using quantitative and qualitative approaches. Focuses on understanding levels of evidence for implementing evidence-based practice and performance improvement in nursing practice and health care. Investigates research methods associated with health disparities, access to health care, and clinical outcomes.
PREREQUISITE: ADMISSION TO GRADUATE STATUS OR PERMISSION OF SONHS FACULTY.
NUR631 Advanced Practice Nursing of the Adult II
4-7 credits Spring Semester
Theoretical and clinical bases for health management of health alterations in the adult population. Emphasis on strategies for health maintenance and prevention of health problems, management of alterations, discharge planning and rehabilitation of individuals and aggregate population. (2:2) (2:5)
PREREQUISITE: NUR 601, 612, 613, 628 OR PERMISSION OF SONHS FACULTY.

NUR632 Women's Health Care for Special Populations
5 credits Offered By Announcement Only
Psycho-social, cultural, physiologic, and economic parameters of health care for special populations of women. Theoretically based clinical focus on the health care management of the female adolescent, reproductive age woman, including fertility and infertility, and the mature woman, in a framework of homelessness, violence, substance abuse, HIV/AIDS, and oncology. Outreach clinical sites in a variety of settings will be utilized. (2:12)
PREREQUISITE: NUR 626, 627, 629.

NUR634 Perinatal Health Care
0-5 credits Offered By Announcement Only
Continuation of the application of physiologic, psychosocial, and cultural concepts to perinatal health care management. Emphasis is placed on nurse-midwifery management of intrapartum, postpartum, and neonatal clients. (2:12)
PREREQUISITE: NUR 626, 627.

NUR639 Acute Care Nursing of Adults II
0-7 credits Fall Semester
The second of two clinical practicums designed to guide the development of scientific knowledge and advanced practice skills in the area of acute care nursing. Designed to assist the student to assume the role of the Acute Care Nurse Practitioner/Clinical Nurse Specialist. (2:5)
PREREQUISITE: NUR 622.

NUR640 Teaching and Learning Theory in Clinical Nursing Education
3 credits Offered By Announcement Only
The focus of this course is the exploration of principles and practice of teaching and learning integral to clinical nursing education. Identification of the role of the faculty in teaching students with diverse learning styles and needs within a variety of clinical settings.
PREREQUISITE: ADMISSION TO GRADUATE STATUS

NUR641 Methods for Clinical Nursing Education
3 credits Offered By Announcement Only
The focus of this course is the organization and management of instruction for clinical nursing education. Emphasis is on effective strategies for development of learning opportunities in diverse clinical settings.
PREREQUISITE: NUR 640 OR 551 OR PERMISSION OF SONHS FACULTY.

NUR642 Evaluation in Clinical Nursing Education
3 credits Offered By Announcement Only
The focus of this course is the exploration of principles and practices of evaluation integral to clinical nursing education.
PREREQUISITE: NUR 640, 641 OR 551, 555 OR PERMISSION OF SONHS FACULTY.
NUR643 Practicum in Nursing Education  
5 credits  Offered By Announcement Only  
The focus of this course is laboratory and clinical application of principles of teaching and learning. Emphasis is on the operationalization of the clinical faculty role.  
PREREQUISITE: NUR 640, 641, 642 OR 551, 553, 555 OR PERMISSION OF SONHS FACULTY.

NUR644 Leadership and Professional Development Strategies for Nursing  
4 credits  Offered By Announcement Only  
In this course, students will be exposed to the principles of organizational culture, dynamics, mission, vision, values, and goals as it impacts nursing. Additionally they will learn current theories of change management and resource management for nursing practice. They will explore change agent roles in project management and processes.

NUR645 Interdisciplinary Anesthesia Nursing  
1-14 credits  Spring Semester  
Initial integration and synthesis course of advanced knowledge and skills for interdisciplinary anesthesia nursing care. Selected topics and clinical case studies include collaborative-decision-making, effective communication, planning and evaluation for patients with complex problems and conditions across the lifespan. With continual guidance, students assume greater responsibility for culturally competent and interdisciplinary anesthesia care.  
PREREQUISITE: NUR 620.

NUR646 Interdisciplinary Anesthesia Nursing II  
0-14 credits  Spring Semester  
Second integration and synthesis course of advanced knowledge and skills for interdisciplinary anesthesia nursing care for complex problems and conditions across the lifespan. With moderate guidance students assume greater responsibility for culturally competent and interdisciplinary anesthesia care.  
PREREQUISITE: NUR 645.

NUR647 Advanced Practice Nursing Integration  
0- 7 credits  First & Second Summer Session  
Integration of the components of the Advanced Practice Nursing role to analyze advanced practice issues. (2:5)  
PREREQUISITE: NUR 623, 628, 631 AND 627

NUR648 Internship  
0- 7 credits  Fall Semester  
Integration and role synthesis of Advanced knowledge and skills in nurse midwifery care for women and infants within diverse cultural clinical settings. Selected topics include practice management and clinical case studies to include diagnosis, collaborative practice, planning and evaluations of care for normal and complex conditions for the female adolescent, reproductive age woman and infant, the mature women and their families.  
PREREQUISITE: NUR 626: NUR 627: NUR 628: NUR 631: NUR 634

NUR650 Interdisciplinary Anesthesia Nursing III  
0-14 credits  Offered By Announcement Only  
Third and final integration and synthesis course of advanced knowledge and skills of interdisciplinary anesthesia nursing care for complex problems and conditions across the lifespan. With minimal guidance students assume greater responsibility for culturally competent and interdisciplinary anesthesia care.  
PREREQUISITE: NUR 646.
NUR652 Introduction to Clinical Inquiry I
3 credits  First & Second Summer Session
Combines clinical knowledge and hands-on clinical experience in an area of the student's potential research interest. Students will practice under the supervision of an advanced practice nurse in the specialty area. Students are expected to begin the process of identifying clinical research problems. (1:2)
PREREQUISITE: ADMISSION TO THE BSN TO PHD PROGRAM

NUR653 Introduction to Clinical Inquiry II
6 credits  First & Second Summer Session
Combines clinical knowledge and hands-on clinical experience in an area of the student's potential research interest. Students will practice under the supervision of an advanced practice nurse in a specialty area. There will be a focus on health care delivery systems. Students are expected to translate clinical problems into researchable questions. (1:5)
PREREQUISITE: CO REQUISITES: NUR 652, NUR 662, EPS 553, NUR 665, EPS 671

NUR654 The Evolution of Nursing Practice and Applications of Theory in Nursing Practice
3 credits  Spring Semester
This course is an overview of the conceptual foundations of nursing science and nursing practice. Knowledge from basic and applied sciences and ethics as well as the history of the global evolution of nursing practice are examined.
PREREQUISITE: ADMISSIONS TO THE DNP PROGRAM OR PERMISSION OF THE SONHS ASSOCIATE DEAN

NUR655 Health Care Management, Economics, Financing, and Ethics
3 credits  Offered By Announcement Only
This course is an overview of health care management, financing, ethics and core and advanced concepts of health care economics. This course will also examine issues associated with health care management, economics, and ethics.
PREREQUISITE: ADMISSIONS TO THE DNP PROGRAM OR PERMISSION OF THE SONHS ASSOCIATE DEAN

NUR656 International Health
2-3 credits  First & Second Summer Session
This course covers diverse topics that affect the health of the population and advanced practice nursing internationally.
PREREQUISITE: ADMISSIONS TO THE DNP PROGRAM OR PERMISSION OF THE SONHS ASSOCIATE DEAN

NUR657 Population Based Health and Health Care Health Disparities
3 credits  Spring Semester
This course is an overview of knowledge from nursing, public health and other disciplines for population based assessment. The importance of cultural and ethical dimensions in program development is included.
PREREQUISITE: ADMISSIONS TO THE DNP PROGRAM OR PERMISSION OF THE SONHS ASSOCIATE DEAN
NUR658 Structure and Processes in Health Care Organization and Health Care Policy

3 credits  Spring Semester
An exploration of health care organizations and healthcare policy, and how change is effected in both. Health care policy and planning to address health care disparities at the local, state, and federal levels will be explored. Organizational diagnosis, organizational change, and ethical dimension of public policy formulations and implementation will be highlighted.
PREREQUISITE: ADMISSIONS TO THE DNP PROGRAM OR PERMISSION OF THE SONHS ASSOCIATE DEAN

NUR659 Technology in Health Care

0-3 credits  Offered By Announcement Only
An exploration of the various aspects of the evolving technology to improve and transform health care and advanced practice nursing. This course prepares DNP nursing students to design, select and use technology to support, manage, and improve patient care and health care systems.
PREREQUISITE: ADMISSIONS TO THE DNP PROGRAM OR PERMISSION OF THE SONHS ASSOCIATE DEAN

NUR660 Translational Science

3 credits  Fall & Spring Semester & First & Second Summer Session
Emphasis is on translational science which includes organizational readiness and promoting change in health care environment. Focus is on utilizing systematic analysis to identify, plan, execute and appraise best evidence on selected topics.
PREREQUISITE: ADMISSION TO DNP PROGRAM; PERMISSION OF INSTRUCTOR

NUR662 Nursing Epistemology

4 credits  Fall Semester
Focus on historical and philosophical perspectives in the development of knowledge and patterns of knowing with in-depth examination of the evolution of nursing science. Analysis of concepts relevant to nursing phenomena. Approaches to scientific development in nursing with emphasis on theory building and theory generation.
PREREQUISITE: ADMISSION TO PHD PROGRAM

NUR665 Quantitative Research Methods

3 credits  Fall Semester
In-depth exploration of research methods and design for quantitative research in nursing. Emphasis on development of a research problem; quantitative research design from descriptive to randomized clinical trials; epidemiologic designs; threats to validity; sampling and power analysis; measurement including psychometric theory, data collection and management; and interpretation of data. Other topics include ethics, human subjects' protection, and translation of finding into practice.
PREREQUISITE: ADMISSION TO PHD PROGRAM

NUR667 Research Practicum

1 credit  Fall Semester
Student participates in an ongoing research project under the guidance of a faculty member. Conducts the practical aspects of research including: IRB application/continuing reports, data collection and management.
PREREQUISITE: NUR 665, EPS 670
NUR670 Qualitative Methods in Research  
3 credits  
Spring Semester  
Exploration of inductive approaches to research and the use of qualitative methods including phenomenology, ethnography, and grounded theory. The techniques include focus groups, unstructured and structured interviews, and ethno science. Discussion of techniques, analysis, and the ethical and political implications of special problems in qualitative research is also included.  
PREREQUISITE: PREREQUISITE OR COREQUISITE: NUR 662, ADMISSION TO PH.D. IN NURSING OR PERMISSION OF THE INSTRUCTOR.

NUR671 Scientific and Theoretical Writing  
3 credits  
Spring Semester  
Introduction to the process of scientific writing including concept analysis and publication. Critique and respond to own and peers' writing. Challenges of making revisions. Synthesize relevant literature. Other topics include: impact factor, publication process, and techniques of writing.  
PREREQUISITE: NUR 662, NUR 665, NUR 677

NUR672 Capstone I  
0-3 credits  
First & Second Summer Session  
The capstone project is required synthesizing initiative for students to apply theory, supported by evidence and expert knowledge of nursing practice, by completing a scholarly project of the student's or agency's choice. Students may design a practice change imitative under the direction of a faculty member and preceptor. (1:2)  
PREREQUISITE: ADMISSION TO THE DNP PROGRAM OR PERMISSION OF THE SONHS ASSOCIATE DEAN

NUR673 Capstone II  
0-3 credits  
Fall Semester  
The capstone project is a required synthesizing initiative for students to apply theory, supported by evidence and expert knowledge of nursing practice, by completing a scholarly project of the student's or agency's choice. Students may design a practice change imitative under the direction of a faculty member and preceptor. (1:2)  
PREREQUISITE: NUR672

NUR675 Field Project in Qualitative Research  
4 credits  
Fall Semester  
Students conduct a field project using qualitative research methodology and techniques. Seminars related to analysis and interpretation of data are also included.  
PREREQUISITE: NUR 670.

NUR677 Applied Statistics: Analysis of Variance  
3 credits  
Fall Semester  
Overview of analysis of variance (ANOVA) for categorical predictors and continuous outcomes including one-way ANOVA, two-way ANOVA, and ANCOVA. Computer applications doing real data and standard statistical software packages  
PREREQUISITE: MASTER'S LEVEL STATISTICS COURSE E.G. EPS 553, PERMISSION OF INSTRUCTOR
NUR678 Applied Statistics: Multiple Regression
3 credits  Spring Semester
Overview of multiple regression analysis for continuous, categorical, and moderator/mediator variables and interactions. Computer applications using real data and standard statistical software pkgs.
PREREQUISITE: PERMISSION OF INSTRUCTOR

3 credits  Fall Semester
PREREQUISITE: NUR 677-ANOVA; NUR 678-REGRESSION. CO-REQUISITES: NUR 681-MEASUREMENT NURS PHENOMENON, PERMISSION OF INSTRUCTOR.

NUR680 Research Ethics
0 credit  Fall Semester
PREREQUISITE: PERMISSION OF INSTRUCTOR; PH.D. STUDENTS ONLY.

NUR681 Measurement of Nursing Phenomena
3 credits  Fall Semester
Development of instruments to measure a phenomenon of concern within the domain of nursing.
PREREQUISITE: PERMISSION OF INSTRUCTOR

NUR682 Advanced Practice Psychopharmacology
2 credits  Spring Semester
PREREQUISITE: GRADUATE STANDING PERMISSION OF INSTRUCTOR; COREQUISITES: NUR 683; NUR 684

NUR683 Theoretical Bases for Advanced Practice Psychiatric Mental Health Nursing
2 credits  Spring Semester
PREREQUISITE: GRADUATE STANDING PERMISSION OF INSTRUCTOR. COREQUISITES: NUR 682; NUR 684

NUR684 Advanced Practice Psychiatric Mental Health Nursing Therapeutic Interventions
1- 5 credits  Spring Semester
PREREQUISITE: GRADUATE STANDING PERMISSION OF INSTRUCTOR. PREREQUISITES: NUR 682 AND NUR 683

NUR685 Advanced Practice Psychiatric Mental Health Preceptorship 1
4 credits  Fall Semester & First & Second Summer Session
PREREQUISITE: GRADUATE STANDING PERMISSION OF INSTRUCTOR. PREREQUISITES: NUR 682, NUR 683 & NUR 684. COREQUISITES: NUR 686

NUR686 Advanced Practice Psychiatric Mental Health Nursing Preceptorship 2
5 credits  Fall Semester & First & Second Summer Session
PREREQUISITE: GRADUATE STANDING PERMISSION OF INSTRUCTOR. PREREQUISITES: NUR 682, NUR 683 & NUR 684. COREQUISITES: NUR 685

NUR690 Independent Study
1- 6 credits  Fall & Spring Semester
A in-depth study of a specified area in advanced nursing of special interest to the student, under faculty guidance.
PREREQUISITE: PERMISSION OF PROFESSOR REQUIRED BEFORE ENROLLMENT.
NUR697 Selected Topics
0-12 credits  Offered By Announcement Only
Subject matter offerings based upon student demand and availability of faculty. Subtitles describing topics will be shown in class schedule in parentheses after selected topic notation.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

NUR698 Selected Topics
0-6 credits  Fall & Spring Semester & First & Second Summer Session
Subject matter offerings based upon student demand and availability of faculty. Subtitles describing topics will be shown in class schedule in parentheses after selected topic notation.
PREREQUISITE: PERMISSION OF INSTRUCTOR.

NUR699 Special Topics in Nursing Research
1-3 credits  Fall & Spring Semester
Directed or independent research in collaboration with a faculty member providing opportunity for participation in ongoing nursing research. Specific requirements and credit allocation determined by contractual arrangement between student and faculty member.

NUR710 Master's Thesis
1-6 credits  Fall & Spring Semester
The student working on his/her master's thesis enrolls for credit, in most departments not to exceed six, as determined by his/her advisor. Credit is not awarded until the thesis has been accepted.

NUR720 Research in Residence
0 credit  Fall & Spring Semester
Used to establish research in residence for the thesis for the master's degree after the student has enrolled for the permissible cumulative total in NUR 730 (usually six credits). Credit not granted. May be regarded as full-time residence.

NUR725 Continuous Registration--Master's Study
0 credit  Offered By Announcement Only
To establish residence for non-thesis master's students who are preparing for major examinations. Credit not granted. Regarded as full-time residence.

NUR730 Doctoral Dissertation
1-12 credits  Fall & Spring Semester
Required of all candidates for the Ph.D. The student will enroll for credit as determined by his/her advisor but not for less than a total of 12 credits. Not more than 12 hours of NUR 730 may be taken in a regular semester, nor more than six in a summer session. A student who has passed (a) qualifying examinations, and (b) is engaged in an assistantship, may still take the maximum allowable credit stated above.

NUR750 Research in Residence
0 credit  Fall & Spring Semester
Used to establish research in residence for the Ph.D., after the student has been enrolled for the permissible cumulative total in appropriate doctoral research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.
SAP503 Czech Republic-Charles University
1-18 credits   Fall & Spring Semester
Czech Republic - Charles University (Grad Level)

SAP699 Study Abroad
1-12 credits   Fall & Spring Semester
In some departments it is possible to earn graduate credits for study taken abroad. Curriculum must be worked out by the student in conjunction with an advisor.
UNIVERSITY INTERNSHIP

UMI605 UNIVERSITY OF MIAMI INTERNSHIP
0-1 credits  Fall & Spring Semester & First & Second Summer Session
PREREQUISITE: N/A

UMI610 UNIVERSITY OF MIAMI INTERNSHIP
0-1 credits  Fall & Spring Semester & First & Second Summer Session