

HEALTH SCIENCE

Academic Programs

The University of Miami (UM) School of Nursing and Health Studies (SONHS) offers courses leading to the degree of Bachelor of Science in Health Science (BSHS). Baccalaureate education provides the foundation for further education in specialized health professional fields. All students who pursue the BSHS degree graduate with a health science major and one of the following pre-professional tracks:

1. General Track
2. Health Management and Policy Track
3. Pre-Medical Track
4. Pre-Occupational Therapy Track
5. Pre-Pharmacy Track
6. Pre-Physical Therapy Track

Students are encouraged to contact graduate programs directly to ascertain if there are specific course requirements they must complete above and beyond those included in their chosen pre-professional track.

Admission

Admission as a new freshman or transfer student to the BSHS program is handled through the Office of Undergraduate Admission (http://admissions.miami.edu/undergraduate/?utm_source=Mailers&utm_medium=Print&utm_campaign=FromPrint) and is open to applicants who meet the general requirements for admission to the UM.

In accepting students into the BSHS program, the UM does not in any way ensure admittance into professional graduate programs. Admission to professional graduate programs is dependent upon strong undergraduate academic performance and appropriate, well-rounded extracurricular experiences. Admission to these programs is determined independently by the school or program to which the student applies.

Applicants interested in any of the SONHS' baccalaureate programs are encouraged to speak with a representative from the SONHS' Office of Student Services (OSS) (<https://www.sonhs.miami.edu/admissions-and-student-services/office-of-student-services/>) and/or the UM's Office of Undergraduate Admission (http://admissions.miami.edu/undergraduate/?utm_source=Mailers&utm_medium=Print&utm_campaign=FromPrint).

Academic Policies

Grades

Students should refer to the Student Handbook (<http://www.sonhs.miami.edu/academics/student-handbooks/>) for more detailed information on the SONHS' policies related to grades, progression, and dismissal.

Undergraduate BSHS students must earn a C- or higher in each course for the major to progress.

When a course must be repeated, progression in the BSHS program may be altered in order for prerequisites to be met. Such alteration may lengthen the time required to complete the BSHS program.

Grade Point Averages (GPAs)

Students should refer to the Student Handbook (<http://www.sonhs.miami.edu/academics/student-handbooks/>) for more detailed information on the SONHS' policies related to GPAs, progression, and dismissal.

Requirements to Declare

Current UM students who wish to switch into the BSHS program must possess a minimum 3.0 UM GPA to be considered for admission. Please note that the SONHS may have a waitlist to get into the BSHS program so meeting the minimum admission criteria for the BSHS program does not guarantee admission. Seats in the program are allocated from the waitlist to students based on a holistic review of all students on the waitlist but the following factors are strongly considered in each admission decision: (1) the availability of seats in a student's intended year of graduation, (2) the date in which a student added himself/herself to the waitlist, (3) the student's UM GPA, and (4) the feasibility of the student completing the desired degree on time. Questions about the BSHS waitlist should be directed to the academic advisors in the Office of Student Services (OSS) (<https://www.sonhs.miami.edu/admissions-and-student-services/>).

Incoming transfer students who plan to enter the BSHS program must possess a minimum 3.0 transfer GPA to be considered for admission.

Requirements to Continue

BSHS are strongly encouraged not to continue with the BSHS degree if they have less than a 2.5 UM GPA after 15 credits completed in the major.

Requirements to Graduate

Students enrolled in the BSHS program must complete their coursework with a minimum 2.0 UM GPA and a minimum 2.0 major GPA to graduate.

Prerequisites and Corequisites

Students must successfully complete all specified prerequisites with a C or higher before entering a nursing course or with a C- or higher before entering a health science or public health course. Students must also register for all required corequisites at the time of enrollment. If students enroll in a health science, nursing, or public health course without the proper prerequisite or corequisite, they may be dropped from the course at the discretion of the course instructor, Office of Student Services (OSS) (<https://www.sonhs.miami.edu/admissions-and-student-services/office-of-student-services/>), Associate Dean, or Dean. Students should consult an academic advisor in the Office of Student Services (OSS) (<https://www.sonhs.miami.edu/admissions-and-student-services/office-of-student-services/>) to discuss any questions related to course enrollment.

Note: All Health Science majors must take the anatomy and physiology lectures and labs offered through the SONHS (i.e., HCS 212/213 and HCS 215/216) as stated in their plan of study. No exceptions will be made to take other UM anatomy or physiology lectures or labs outside of the SONHS.

Residency Requirements

Undergraduate BSHS students must adhere to the general UM residency rules. At least half of the health science major must be taken in residence at the UM. Exceptions to the residency requirements may only be obtained through an appeal to the Undergraduate Academic Standing and Admissions Committee (UGASAC). Students should speak with an academic advisor in the Office of Student Services (OSS) (<https://www.sonhs.miami.edu/admissions-and-student-services/office-of-student-services/>) for more information on the residency requirements and on the UGASAC appeals process.

Transfer Credit

Students may transfer health science, nursing, or public health courses from other institutions to the UM with approval by the Office of Student Services (OSS) (<https://www.sonhs.miami.edu/admissions-and-student-services/office-of-student-services/>). Detailed course descriptions or syllabi must be presented to the Office of Student Services (OSS) (<https://www.sonhs.miami.edu/admissions-and-student-services/office-of-student-services/>) for transfer equivalency reviews.

Degree Requirements

Listed in this section are the degree requirements for the BSHS program.

The University of Miami's General Education Requirements (GERs) consist of the Areas of Proficiency, Areas of Knowledge, and Advanced Writing and Communication Skills requirements. Through the completion of the GERs, graduates acquire essential intellectual skills and engage a range of academic disciplines. The GERs provide students with the opportunity to study methodologies and achievements in all areas of human inquiry and creative endeavor, and to cultivate abilities essential for the acquisition of knowledge. The GERs also allow students to create an integrative map for their academic careers, providing a context for more focused studies.

There are numerous ways students can create plans of study for the BSHS program. Students should feel empowered to use the information listed in the Academic Bulletin and the Student Handbook (<http://www.sonhs.miami.edu/academics/student-handbooks/>) to take charge of their education, pursue their own academic interests, and create their own, unique plans of study. Students should meet with an academic advisor in the Office of Student Services (OSS) (<https://www.sonhs.miami.edu/admissions-and-student-services/office-of-student-services/>) to discuss any questions related to degree requirements and plans of study.

Areas of Proficiency

The Areas of Proficiency requirements ensure that students either already possess, or develop at the University, the ability to express themselves effectively, to use quantitative skills with facility, and to reason cogently.

Written Communication Skills

Effective writing skills advance ideas efficiently and persuasively, so the expectation is that students become adept at using writing as an effective communication tool.

Requirements

Students fulfill this requirement by completing WRS 105 and WRS 106/WRS 107/ENG 106 (Note: SAT or ACT verbal scores can be used to waive the WRS 105 requirement; credit will not be awarded for the waiver. Students who enter UM with credits for WRS 105 or WRS 106/WRS 107/ENG 106 may take WRS 208 to finish this requirement).

Outcomes

By completing the Written Communication Skills requirement, students will be able to:

1. Demonstrate effective written communication skills in relation to specific rhetorical tasks.
2. Construct original, well-reasoned arguments using a range of materials.
3. Integrate and synthesize appropriate and relevant primary and secondary sources in their writing.

Quantitative Skills

In a world increasingly influenced by science and technology, it is important for students to acquire the capacity to understand and use essential quantitative skills. The Quantitative Skills Proficiency Requirement helps students learn to use quantitative skills and tools to solve problems, including the interpretation, manipulation, and application of quantitative data.

Requirements

Students fulfill this requirement by completing a course in each of the following areas:

1. **Calculus:** MTH 141, MTH 161, or MTH 171
2. **Computer Science:** 1 CSC or BTE course
3. **Statistics:**
 - a. Health Management and Policy Track: MAS 201 or other approved statistics course
 - b. All other tracks: HCS 202 or other approved statistics course

Math placement criteria is established affected by the Department of Mathematics (<http://www.math.miami.edu/undergraduate/aleks-math-placement/>). The following items may affect students' math placement at the UM: SAT and ACT scores, ALEKS math placement scores, and AP, IB, dual enrollment, and transfer credits. Students should review the information listed on the Department of Mathematics (<http://www.math.miami.edu/undergraduate/aleks-math-placement/>) website and consult with an academic advisor in the Office of Student Services (OSS) (<https://www.sonhs.miami.edu/admissions-and-student-services/>) if they have any questions.

Outcomes

By completing the Quantitative Skills requirement, students will be able to:

1. Select and use appropriate quantitative methods and tools to solve problems; and
2. Interpret, manipulate, and apply quantitative data to solve problems.

Areas of Knowledge (Cognates)

The Areas of Knowledge requirement is intended to help students understand and appreciate intellectual achievements in major areas of human inquiry and creative endeavor. Students can satisfy this requirement through the majors, minors, or cognates.

In the Cognates Program, students examine creative expression in the arts, literature, and philosophy; study human development and behavior; and explore the mathematical, scientific, and technological world. Students fulfill an Area of Knowledge requirement by completing a cognate in one of the three areas of the university curriculum: Arts & Humanities (A&H); People & Society (P&S); and Science, Technology, Engineering & Mathematics (STEM). A cognate normally requires nine credits of coursework, and can be either a thematic or an individualized cognate. Thematic cognates consist of courses grouped by theme, while individualized cognates consist of courses that have the same area of knowledge designation. Completed cognates are listed on the students' transcripts.

As an alternative to using a cognate to fulfill an Area of Knowledge requirement, a major or minor may be used to fulfill the Area of Knowledge requirement. Approved thematic cognates can be found using the cognate search engine (<https://cognates.miami.edu/>) which allows students to search for thematic cognates based on cognate features, courses, and keywords. Each thematic cognate is administered by a department or program designated as the "Responsible Academic Unit" (RAU). Inquiries about a thematic cognate should be directed to the cognate's RAU. Several cognates may include the same courses; however, one course cannot be used to complete multiple cognates. For more information on cognates, go to the "General Education Requirements" section of the Academic Bulletin or visit <http://www.miami.edu/cognates/>.

Arts & Humanities

Arts & Humanities cognates engage students in the study of the most enduring and influential works of art, imagination, and culture. Through study, creation, and performance, courses in this area enable students to understand the works of artists, musicians, novelists, philosophers, playwrights, poets, historians, and theologians. These courses cultivate the ability to interpret, critically evaluate, and experience the creative products of human culture and expression.

Requirements

Complete one Arts & Humanities cognate.

Outcomes

By completing the Arts & Humanities requirement, students will be able to:

1. critically evaluate and interpret the creative products of humanistic and artistic expression, applying appropriate vocabulary and concepts for their description and analysis
2. understand the creation and performance of art

People & Society

People & Society cognates help students understand and analyze the organization of society and the patterns of social change, in the past and in the contemporary world.

Requirements

Complete one People & Society cognate.

Outcomes

By completing the People & Society requirement, students will be able to:

1. analyze the organization of society
2. analyze patterns of social change

Science, Technology, Engineering, and Mathematics (STEM)

STEM cognates develop students' abilities to think critically about mathematical, scientific, and technological issues by understanding the processes and methods of scientific inquiry involved in experimentation, observation, and quantitative analysis. The STEM cognates nurture literacies that enable students to make informed decisions in an increasingly complex world.

Requirements

Complete one STEM cognate. The health science major may be used to fulfill this cognate area.

Outcomes

By completing the STEM requirement, students will be able to:

1. understand the use of quantitative tools, experimentation, and observation to analyze and solve mathematical, scientific, environmental, and technological problems
2. interpret quantitative data and draw useful conclusions

Individualized Cognates

Students may create an individualized cognate to fulfill an Area of Knowledge requirement. All of the courses used in an individualized cognate must have the Area of Knowledge attribute in CaneLink for the requirement that they are being used to fulfill, even if they are transfer credits. If a course has been approved to be utilized in an individualized cognate, an Area of Knowledge attribute will be listed in CaneLink. No exceptions will be accepted. A searchable list of courses eligible to be used in individualized cognates is available here (<https://ua.miami.edu/indiv-cognate-courses.html>).

Individualized cognates use the following academic plan codes: AT_0080 (Arts & Humanities), PS_0070 (People & Society), and ST_0026 (STEM).

Major

Refer to the "Major Requirements" section below for information on the courses required for the BSHS program.

Minor

All students must complete a minor from the SONHS' approved minors list. An approved second major from this list waives the minor requirement. See the Office of Student Services (OSS) (<https://www.sonhs.miami.edu/admissions-and-student-services/office-of-student-services/>) for details.

Advanced Writing and Communication Skills

The Advanced Writing and Communication Skills requirement empowers health science students to develop their communication skills, both written and verbal, enabling them to better articulate information relating to health science, nursing, and public health.

Requirements

To fulfill this requirement, students must complete five designated writing-intensive courses. Several health science requirements and/or electives may qualify as writing-intensive.

Health Science Courses that Require Formal Student Writing or Presentation

The following SONHS courses carry writing and presentation components and may count for the BSHS program:

Course	Writing Assignment	Student Presentations
BPH 301	Two reflective papers, Pop culture analysis paper, Sex research paper, 4 written homework assignments	Research presentation
BPH 309	Three reflective papers	Final student presentation
BPH 310	Seven P&P assignments, Literature review proposal, Literature review synthesis paper	P&P final presentation, Data visualization
BPH 321	Two reflective papers, Literature review matrix, Public health logic model, Intervention paper	Public health intervention presentation

BPH 322	Policy Analysis Paper	HiAP Presentation
BPH 419	Two reflective papers, Two service-learning journals	One poster presentation, One research presentation
BPH 490	Two reflective papers, Final written project	Poster presentation

Outcomes

By completing the Advanced Writing and Communication Skills requirement, students will be able to:

1. effectively communicate information related to health science in both speech and in writing, using appropriate information sources, presentation formats, and technologies
2. demonstrate the necessary written and verbal communication skills to effectively carry out a career in healthcare

Plan for Assessment

Student Performance on Written Assignments and Presentations

In order to graduate from the BSHS program students must successfully pass two courses in Written Communication Skills (i.e., WRS 105 and WRS 106/WRS 107/ENG 106) as well as five writing-intensive courses with a grade greater than or equal to 70%. Grading of student written assignments and oral presentations are based on defined rubrics. These courses may be applied to the BSHS program as outlined in the major requirements. A number of elective courses in the BSHS curriculum also require students to submit significant written assignments and give oral presentations throughout the semester. Throughout the BSHS curriculum, students must demonstrate their ability to write and communicate accurately and with clarity in order to successfully complete their courses.

Graduating Senior Survey (GSS) Responses for Questions Related to Written and Verbal Communication

Based on the results from the GSS, students believe their undergraduate coursework in the BSHS program significantly enhanced their written, oral, and formal presentation skills, which, in turn, allowed them to more effectively interact with various individuals and groups.

Electives

Students must earn a minimum of 120 credits to complete the BSHS degree. Students may need to take varying numbers of elective credits beyond the degree requirements listed above to reach the 120 credit threshold.

Major Requirements

Health science must be a student's first major. There is no additional major offered in health science.

Visit the "TRACKS IN BSHS PROGRAMS" link to learn more about the major requirements for the SONHS' BSHS programs, which are listed under the "OVERVIEW" section for each BSHS program.

Minor Requirements

There is no minor available in health science.

Classes Not Applicable Toward SONHS Degrees

The following courses do not count toward the 120 credits required of the BSHS degree: DAN 101-104, ENG 103, and MTH 099. Based on their ENG or MTH placement scores, students may need to complete ENG 103 or MTH 099 before enrolling in higher-level requirements. Even though the courses listed above cannot count toward graduation, they can count toward the 12 credits required to be considered a full-time student.

Senior Assessments

In line with the SONHS' ongoing accreditation efforts, seniors with a major in the health science, nursing, and public health may be required to participate in general or major-specific senior assessments lasting up to several hours each. Scores on senior assessments will not affect students' GPAs or ability to graduate, but failure to complete required assessments may delay or prevent students' ability to graduate.

Research Experience

Students may participate in research experiences through the SONHS (<http://www.miami.edu/sonhs/index.php/sonhs/research/>) or the Office of Undergraduate Research and Community Outreach (<https://ugr.miami.edu/>) during their time at the UM. Students should speak with the academic advisors located in the Office of Student Services (OSS) (<https://www.sonhs.miami.edu/admissions-and-student-services/office-of-student-services/>) to learn more about the research opportunities available to them at the UM.

Required Coursework and Sample Plans of Study

Visit the "TRACKS IN BSHS PROGRAMS" link to learn more about the academic requirements for the SONHS' BSHS programs and to view sample graduation plans, which are listed under the "OVERVIEW" and "PLAN OF STUDY" sections, respectively, for each BSHS program.

The University of Miami's School of Nursing and Health Studies (SONHS) and the Department of Public Health Sciences (DPHS) offer the following 4+1 joint degree programs:

- Bachelor of Science in Health Science/Master of Public Health (4+1 BSHS/MPH) (<http://bulletin.miami.edu/undergraduate-academic-programs/nursing-health-studies/health-science/bshs-mpj-joint-degree/>)
- Bachelor of Science in Health Science/Master of Science in Public Health (4+1 BSHS/MSPH) (<http://bulletin.miami.edu/undergraduate-academic-programs/nursing-health-studies/health-science/bshs-msph-joint-degree/>)

HCS 200. Electrophysiology. 3 Credit Hours.

This course is a survey of the basic principles of Public Health.

Components: LEC.

Grading: GRD.

Typically Offered: Offered by Announcement Only.

HCS 202. Introductory Statistics in Health Care. 3 Credit Hours.

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, health sciences and public health.

Corequisite: MTH 101. Or Requisite: ALEKS > or = 55 or SAT Score > or = 630 or ACT > or = 28.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

HCS 207. Pharmacology for Health Science. 3 Credit Hours.

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.

Prerequisites: BIL 150 and CHM 103 or 111 or 121 and HCS 212/215.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

HCS 212. Human Anatomy. 3 Credit Hours.

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.

Components: LEC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

HCS 213. Human Anatomy Laboratory. 1 Credit Hour.

Laboratory to accompany HCS 212.

Pre or Corequisite: HCS 212.

Components: LAB.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

HCS 215. Principles of Systemic Physiology. 3 Credit Hours.

Emphasis is on the understanding of the Physiology and selected Pathophysiology of various organs and systems.

Prerequisite: HCS 212. And Pre or Corequisite: CHM 111 or CHM 121 or CHM 103 and CHM 113 or CHM 105.

Components: LEC.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

HCS 216. Principles of Systemic Physiology Laboratory. 1 Credit Hour.

Laboratory to accompany HCS 215

Pre or Corequisite: HCS 215.

Components: LAB.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

HCS 217. Medical Terminology. 1 Credit Hour.

This course will assist the student in understanding the principles of medical word building in order to develop the extensive medical vocabulary used in health care professions. Students receive a thorough grounding in basic medical terminology through the study of root words, prefixes and suffixes. The course emphasizes correct pronunciation, spelling and use of medical terms.

Prerequisite: BIL 150.

Components: CLN.

Grading: GRD.

Typically Offered: Fall, Spring, & Summer.

HCS 299. Applied Basic Principles in Healthcare. 3 Credit Hours.

This course examines basic principles in healthcare such as immunization, CPR, telehealth, electronic health records, and vital signs. Health care is a fundamental human right because it affects an individual's opportunity to pursue life-long goals, reduce pain and suffering, prevent premature loss of life, and provide information needed to plan activities of daily living. Society has an obligation to provide access to an adequate level of care to all its members, regardless of their ability to pay. Students will apply basic healthcare concepts learned in the classroom through individual and group projects.

Admission to health science or public health programs.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

HCS 302. Human Embryology. 3 Credit Hours.

This course will cover fetal human development from conception to birth. Emphasis will be placed on the understanding of the phases of human organogenesis and will serve as a cornerstone for understanding congenital developmental anomalies.

Prerequisite: HCS 212, HCS 215.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.

HCS 352. Biological Principles of Public Health. 3 Credit Hours.

This course examines the biological basis and pathogenesis of diseases from a public health perspective and describes the impact on populations. This course also presents the basic scientific and biomedical concepts of modern public health problems and explores in depth mechanisms and models of the major categories of disease. The biologic principles presented in this course are foundations to developing and implementing public health disease prevention, control, or management programs.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

HCS 355. Global Nutrition. 3 Credit Hours.

This course examines nutrition related public health issues in the global setting. Nutrition related morbidity and mortality, etiologic factors, and population-focused strategies to address these issues are covered. Food relief and nutrition policies and programs at the local, national and international levels are examined. Current scientific research in international nutrition is reviewed from an epidemiological perspective.

Components: LEC.

Grading: GRD.

Typically Offered: Offered by Announcement Only.

HCS 402. Global Health Disparities Research. 3 Credit Hours.

This is a 4 week intensive educational experience that prepares students to be successful conducting supervised health disparities research as part of the MHIRT program at a foreign institution, disseminating findings, and applying to graduate school. The training program is broken into a preparation phase (3 weeks prior to leaving to their host country), and a dissemination phase (1 week after they return). Students will be working as a research assistant at a foreign site for eight weeks in between the preparation and dissemination phases of this training program. Students will learn about the influence of culture and healthcare policy on health and health disparities, research design, statistics, communicating research findings and careers in health disparities research.

Components: LEC.

Grading: GRD.

Typically Offered: Offered by Announcement Only.

HCS 461. Health Disparities Research Practicum. 1-4 Credit Hours.

This course is designed to provide opportunities for students across all levels of higher education to participate in health disparities research. Students will be mentored by a health disparities researcher with an active research project. Objectives will be established by the research mentor and the student according to educational level, interests and opportunities. Students will be incorporated into the research team and expected to attend project meetings. They will also be expected to participate in scholarly work that could contribute to the success of the project. Examples of scholarly work include co-authoring research papers and presentations, developing recruitment materials, assisting in compiling/developing data collection measures, or any other product deemed appropriate by the mentor.

Components: LEC.

Grading: GRD.

Typically Offered: Offered by Announcement Only.

HCS 465. Public Health Statistics and Data Management. 3 Credit Hours.

This course is designed to give students an opportunity to apply basic principles of statistics and data management in public health. Students will learn to use statistical techniques to answer questions relating to the morbidity and mortality of health conditions and the efficacy and effectiveness of public health interventions.

Components: LEC.

Grading: GRD.

Typically Offered: Fall.

HCS 487. Global Health Practicum. 3 Credit Hours.

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 culturally specific health care.

Components: PRA.

Grading: GRD.

Typically Offered: Offered by Announcement Only.

HCS 499. Selected Topics. 0-6 Credit Hours.

A selected topics course is offered as needed in order to present emerging issues or specialized topics that are not part of the regular curriculum.

Components: LEC.

Grading: GRD.

Typically Offered: Fall & Spring.