MARINE GEOSCIENCES

https://graduate.earth.miami.edu/phd-and-ms-programs/marine-geosciences/index.html

Dept. Code: MGS

The graduate program in the Department of Marine Geosciences (MGS) focuses on studying the geology of the Earth Systems through the broad disciplines of geophysics, geochemistry, sedimentology and oceanography.

Graduate students in our department have access to state-of-the-art research facilities and work closely with faculty at the forefront of research on sedimentary systems, earthquakes, volcanoes, plate tectonics, and past and present changes in the Earth's climate and oceans. The MGS faculty and students also emphasize interdisciplinary study where geological phenomena interface with processes that are generally the focus of other disciplines, such as ocean and atmospheric circulation, climate change, biological evolution, and social sciences.

Degree Programs

- Post-Bachelor's Certificate (p. 1)
  - Offered for working professionals who seek specialization in Applied Carbonate Geology.
  - Requires 16 course credit hours for successful completion.
- Master of Professional Science (M.P.S.) (p. 1)
  - (http://bulletin.miami.edu/graduate-academic-programs/marine-atmospheric-science/atmospheric-sciences/#masterstext)Requires 30 credit hours, including a minimum of 24 course credit hours and 2-6 internship credit hours.
- Master of Science (M.S.)
  - Requires 30 credit hours, including 24 course credit hours and 6 research credit hours.
  - Interdisciplinary studies with expertise in physics, chemistry, mathematics, and/or biology are encouraged.
- Doctor of Philosophy (Ph.D.) (p. 1)
  - Requires 60 credit hours, including a minimum of 30 course credit hours and a minimum of 12 research credit hours.
  - Interdisciplinary studies with expertise in physics, chemistry, mathematics, and/or biology are encouraged.

Post-Bachelor's Certificate Program

The goal of the certificate program is to provide first-rate continuing education to professionals or Earth science students who aspire to become experts in carbonate geology. To reach this goal, courses are offered in carbonate sedimentology, seismic stratigraphy, petrophysics, and geochemistry for an advanced knowledge and understanding in carbonate systems. A successful completion of the program will require 16 course credits to be taken. There are ten electable 2-credit or 3-credit courses in the program. Participants will not write a thesis, but the courses are structured in a way that classroom knowledge is directly used in subsequent laboratory classes and projects.

- Certificate in Applied Carbonate Geology (https://marine-geosciences.earth.miami.edu/academics/certificate-program/)

Master of Professional Science (M.P.S.) Program

- M.P.S. in Marine Geosciences (MGS) (http://bulletin.miami.edu/graduate-academic-programs/marine-atmospheric-science/marine-geology-geophysics/marine-geosciences-mps/)

Master of Science (M.S.) Program

- M.S. in Marine Geosciences (MGS) (http://bulletin.miami.edu/graduate-academic-programs/marine-atmospheric-science/marine-geology-geophysics/marine-geology-geophysics-ms/)

Doctor of Philosophy (Ph.D.) Program

- Ph.D. in Marine Geosciences (MGS) (http://bulletin.miami.edu/graduate-academic-programs/marine-atmospheric-science/marine-geology-geophysics/marine-geology-geophysics-phd/)

MGS 601. Oceanography I (Geological). 2 Credit Hours.
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.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MGS 611. Earth Surface Processes. 3 Credit Hours.
An introduction into the sedimentologic, geomorphic, biotic, and hydrologic processes on the Earth surface from the terrestrial to the marine environment and their resultant sedimentary product with the goal to be able to read the rock record and make interpretation on the depositional processes in each environment.
Components: LEC.
Grading: GRD.
Typically Offered: Fall & Spring.

MGS 613. Introductory Geochemistry. 3 Credit Hours.
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.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MGS 614. Geophysics. 3 Credit Hours.
Course topics include seismology, gravity, heat flow, thermal history, geomagnetism, plate tectonics, and their importance in understanding the Earth's crust, mantle, and core.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MGS 619. Field Studies of Geobiology in Tropical Marine Environments. 3 Credit Hours.
Geobiology is an interdisciplinary field that explores interactions between the physical Earth and the biosphere. Biological processes are, for example, critical to the formation of carbonate sediments and sedimentary structures in shallow tropical marine environments. This class will conduct field studies to investigate geobiological processes involved in carbonate sedimentation, maximizing the learning process through a combination of field work, lectures and independent research.
Components: LEC.
Grading: GRD.
Typically Offered: Spring & Summer.

MGS 622. Structural Geology. 4 Credit Hours.
Basic principles of structural geology; behavior of rock materials; description, classification, and analysis of geologic fractures, faults, joints and folds; analysis of rock fabrics; tectonic and geologic history of continents and continental margins. Students are engaged through examples and parallels drawn from practical everyday situations, enabling them to connect theory with practice. Suggested prerequisite: Calculus I or equivalent.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MGS 624. Seismic Interpretation of Carbonate Systems. 3 Credit Hours.
This course provides a comprehensive overview of necessary concepts for seismic interpretation in carbonate systems. Newest concepts in depositional processes in shallow and deepwater carbonate environments, rock physics, and sequence stratigraphy are presented though a combination of lectures, case studies and exercises.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MGS 625. Applied Environmental Geophysics. 3 Credit Hours.
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.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MGS 626. Petrophysics of Carbonates. 3 Credit Hours.
Rock physics of carbonates is invaluable for quantitative assessment of subsurface data. This course will provide an overview of carbonate rock physics principles and equations and introduce the modern geophysical tools that are used to measure these properties. The theoretical lectures are accompanied by exercises that illustrate how the modern logging and subsurface tools use the petrophysical properties to extract geologic information from the subsurface strata.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MGS 627. Analysis of Carbonate Cores and Logs. 3 Credit Hours.
The recognition of ancient carbonate depositional systems in the subsurface as recorded in core borings, thin sections, and geophysical logs. The examination and analysis of a diverse suite of carbonate facies types from an extensive University core archive. This laboratory-based course will examine depositional and diagenetic features in core borings, petrographic thin sections, and downhole logs to interpret the history and extrinsic controls of deposition.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MGS 628. Analyze and Visualize Geoscience Data. 3 Credit Hours.
In this course we use scripting language to improve our understanding of geoscience data (or any data for that matter). With focus on problem solving analytical skills we analyze the interrelationship between physical, chemical, and other descriptive properties of samples. The main objective of this course is to provide a foundation in programming for geoscience problem solving using MATLAB (or Python, both may be introduced, but only one in a given semester).
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MGS 634. Hydrological Hazards. 3 Credit Hours.
This course will explore the causes, effects, and societal response to hydrological hazard.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MGS 635. Geological Hazards. 3 Credit Hours.
This course will explore the hazards related to the dynamic solid Earth. We will look at the physics, causes and effects of earthquakes, volcanic eruptions and tsunamis, their societal impacts, and on measures available to reduce the disaster risks.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MGS 636. Using Drones in Geoscience. 3 Credit Hours.
Drones have become increasingly popular in geoscience research in recent years. Remote images collected with drones are more frequently being used for mapping and surveying, environmental monitoring, and mineral exploration. The primary goal of this course is to provide students with a basic overview of various applications of UAVs and set a foundation for the use of UAVs in the Geosciences. To reach this goal, the course is designed to provide the knowledge of the basic skills required to use drones for geologic and environmental analysis, and teach the students to collect, process, and analyze field data in the form of remotely sensed imagery.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MGS 637. Environmental Site Assessment. 3 Credit Hours.
This course focuses on the study and assessment of impacts on the environment due to human activity. The main focus is on commercial properties that are subject to transactions when the study and documentation of environmental conditions become paramount to the interests of any one of several interested parties. Environmental impacts are reviewed and assessed within technical, economical, legal, and regulatory frameworks. A review of federal, state, and local regulations and laws, scientific principles, and commonly available public information utilized in the study of anthropogenic impacts on real property form the basis for this course.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MGS 638. Saltwater Intrusion in South Florida. 3 Credit Hours.
This class exposes students to projects which might be typical of one carried out by an NGO or an environmental company. The students will collect and analyze surface waters in South Florida for chloride to be used as an indicator of saltwater intrusion. With these data and archive data, collected during previous years by students of this class, they will test hypotheses regarding saltwater intrusion on a temporal and spatial basis. The students will relate these data to distance from the coast, weather patterns, sea level rise, contamination from drilling and mining operations, and other potential sources. The students will prepare and deliver presentations and write a scientific paper that discusses data collected in the class and data from literature sources.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MGS 639. Preparation for Professional Geologist Licensure. 3 Credit Hours.
This course will prepare you for the exams required to obtain a Professional Geologist (P.G.) license in Florida. Such a license demonstrates that you have met the rigorous education and experience requirements set by the National Association of State Boards of Geology (ASBOG). The course will focus not only on the subject areas of general geologic knowledge but on test-taking skills equally important to pass these exams. Becoming a P.G. increases your credibility and expands your career opportunities since many employers require or prefer candidates with a P.G. license.
Components: LEC.
Grading: GRD.
Typically Offered: Fall Even Years.

MGS 641. Field Evaluation of Fossil Platforms, Margins, and Basins. 2 Credit Hours.
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.
Components: FLD.
Grading: GRD.
Typically Offered: Spring.

MGS 642. Field Evaluation of Fossil Platforms, Margins, and Basins II. 2 Credit Hours.
The course is a field investigation of rock sequences of ancient platforms margins and basins. Students will learn how to read the rock record in an outcrop, including recognition of lithology, sedimentary structures, tectonic units, and stratigraphic relationships; how to prepare a field campaign, geological guidebook, and how to record the field observations for scientific analysis; and illustrate how ancient strata can be a source for deciphering depositional, tectonic and environmental processes.
Components: FLD.
Grading: GRD.
Typically Offered: Spring.

MGS 650. Mathematical Methods for Geoscientists. 3 Credit Hours.
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.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MGS 670. Continental Tectonics. 3 Credit Hours.
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.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MGS 679. Plate Tectonics. 3 Credit Hours.
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.
Components: LEC.
Grading: GRD.
Typically Offered: Fall & Spring.

MGS 680. Geological and Environmental Remote Sensing. 3 Credit Hours.
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.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MGS 681. Petroleum Geology. 4 Credit Hours.
Students will learn the basics of hydrocarbon generation, migration and entrapment using a variety of tools and real subsurface datasets. Participants should be comfortable with sedimentary geology, stratigraphy, structural geology. Some basic geophysics is helpful but not necessary. At the end of the course, students will be able to use ARCGIS and other software tools to build risk maps of hydrocarbon prospectively, assess exploration potential of an area and understand the basics of reserve estimation, prospect level risk assessment and ways to estimate yet-to-find volumes for a basin using a variety of statistical as well as geological techniques. The course stresses an understanding of practical applications of petroleum geochemistry, source rock and fluids characterization, burial history and oil and gas show evaluation to predict new accumulations and appraise discoveries. Basic principles of rock property analysis, coupled with an understanding of subsurface pressures, seals and ways to recognize hydrocarbons on electric logs are also covered. Lastly, seismic stratigraphy and plate tectonics are touched upon. A larges for number of subsurface datasets are used and the opportunity exists to learn additional software packages for those interested. Many subsurface problems will involve small teams of students working together to make final presentations simulating real work-place discussions and processes.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MGS 682. Introduction to Seismology. 3 Credit Hours.
This class provides an approachable and concise introduction to seismic theory.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MGS 683. Scanning Electron Microscopy. 2 Credit Hours.
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.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MGS 684. Special Topics. 1-4 Credit Hours.
Lectures, research projects or directed readings in special topics related to M arine Geology and Geophysics.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MGS 685. Special Topics. 1-4 Credit Hours.
Lectures, research projects or directed readings in special topics related to M arine Geology and Geophysics.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MGS 686. Special Topics. 1-3 Credit Hours.
Lectures, research projects or directed readings in special topics related to M arine Geology and Geophysics
Components: LEC.
Grading: GRD.
Typically Offered: Fall, Spring, & Summer.

MGS 687. Facies Succession of Great Bahama Bank. 2 Credit Hours.
To illustrate the vertical and horizontal variability of facies and rock properties in carbonate platforms and to illustrate the processes that creat these variabilities.
Bachelor degree Or equivalent.
Components: FLD.
Grading: GRD.
Typically Offered: Summer.

MGS 688. Heterogeneity of a Windward Margin. 2 Credit Hours.
The seminars will illustrate the processes, facies relationships and dimensions along a high-energy platform margin with a special emphasis on the impact of sea-level fluctuations on the margin system.
Bachelor degree Or equivalent.
Components: FLD.
Grading: GRD.
Typically Offered: Summer.

MGS 691. Research Methods in Electron Microscopy. 2 Credit Hours.
This course will utilize the theory/methods students acquire in the introduction to EM course MGS 583/683 and focus on student research projects utilizing Scanning Electron Microscopy (SEM), Energy Dispersive Spectroscopy (EDS) and Backscattered Electron Imaging (BSE).
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MGS 701. Seminar in Marine Geosciences. 1 Credit Hour.
Oral presentation and discussion of research and special topics by students, faculty, and visiting scientists. Students receiving credit are required to present a seminar.
Components: SEM.
Grading: GRD.
Typically Offered: Fall & Spring.

MGS 710. Subduction Zone Geodynamics. 3 Credit Hours.
Subduction zones produce natural hazards, recycle surface material to and from the deep Earth, and sculpt Earth topography. This course provides an overview of the physical processes that govern subduction zone observations (e.g., topography, tectonics, seismological images), how they evolve over millions of years, and how we can create models to capture these processes. The course consists of lectures, guided analysis of published literature, and a group coding project.
Pre-Requisite: MGS 614.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MGS 720. Satellite Radar Interferometry in the Earth Sciences. 3 Credit Hours.
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.
Components: LEC.
Grading: GRD.

MGS 721. Petroleum Geology of Carbonates. 2 Credit Hours.
The main purpose of the course is to understand the petroleum system in carbonates and learn to evaluate their hydrocarbon potential and reduce risk in exploration. The course would be taught with a number of hands-on exercises and workshops using real data.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MGS 722. Geophysical Inverse Theory. 3 Credit Hours.
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).
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MGS 723. Geodynamics. 3 Credit Hours.
This course is a quantitative discussion of the physical properties of earth materials and dynamic processes in the solid Earth.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MGS 726. Carbonate Diagenesis and Petrography. 2 Credit Hours.
This course will integrate thin section and hand sample description with geochemical principals and data. Students will examine rocks using petrographic and SEM methods and then analyze the same samples to establish paragenetic pathways. At the end of the class, students should be able to confidently use a petrographic microscope, apply staining methods for mineral identification, and use cathodolumiscence.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MGS 728. Advanced Seismology. 3 Credit Hours.
This is an advanced level course designed to involve students into seismological research.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MGS 729. Crustal Deformation. 3 Credit Hours.
This course addresses how the Earth's crust deforms in response to stressing by tectonic and magmatic forces. The course reviews the fundamentals of continuum mechanics and of rock mechanics, elastic, visco-elastic and plastic deformation, the development of rock fractures and fluid flow through the crust.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MGS 750. Stable Isotopes in Biogeochemical Processes. 3 Credit Hours.
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.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MGS 761. Sedimentary Petrology. 3 Credit Hours.
Composition, texture, fabric, and structures of sediments and sedimentary rocks. The occurrence and properties of the major clans of detrital and chemical sediments from a petrologic and historical perspective is discussed.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MGS 762. Comparative Sedimentology. 3 Credit Hours.
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.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MGS 768. Radiogenic Isotope Geochemistry. 3 Credit Hours.
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.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MGS 771. Diagenesis of Carbonate Sediments. 3 Credit Hours.
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.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MGS 772. Basin Analysis and Seismic Interpretation. 3 Credit Hours.
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.
Components: LEC.
Grading: GRD.
Typically Offered: Spring.

MGS 776. Paleoclimatology. 3 Credit Hours.
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.
Components: LEC.
Grading: GRD.
Typically Offered: Fall.

MGS 777. Physical Volcanology. 3 Credit Hours.
Volcanology is the study of volcanoes of the Earth and planets. On Earth, volcanoes occur on land and under the sea. Eruptions vary in size, duration, and frequency, and in the composition of eruptive rocks and volatiles. Proximity to centers of population makes some of them extremely dangerous. This course covers the principles of physical volcanology, including introductory petrology, mineralogy, geology, magma physics, the fluid dynamics of magmas, and volcanic hazards. Course logistics: Lectures supplemented by homework. Homework will be designed to illustrate physical processes.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MGS 781. Advanced Studies. 1-4 Credit Hours.
Special study in areas of special interest to graduate students.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MGS 782. Advanced Studies. 1-4 Credit Hours.
Special study in areas of special interest to graduate students.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MGS 783. Advanced Studies. 1-4 Credit Hours.
Special study in areas of special interest to graduate students.
Components: LEC.
Grading: GRD.
Typically Offered: Offered by Announcement Only.

MGS 784. Advanced Studies. 1-3 Credit Hours.
Special study in areas of special interest to graduate students.
Components: LEC.
Grading: GRD.
Typically Offered: Fall, Spring, & Summer.

MGS 785. Advanced Studies. 1-3 Credit Hours.
Special study in areas of special interest to graduate students.
Components: LEC.
Grading: GRD.
Typically Offered: Fall, Spring, & Summer.

MGS 786. Advanced Studies. 1-3 Credit Hours.
Special study in areas of special interest to graduate students.
Components: LEC.
Grading: GRD.
Typically Offered: Fall, Spring, & Summer.

MGS 787. Advanced Studies. 1-3 Credit Hours.
Special study in areas of special interest to graduate students.
Components: LEC.
Grading: GRD.
Typically Offered: Fall, Spring, & Summer.

MGS 788. Advanced Studies. 1-3 Credit Hours.
Special study in areas of special interest to graduate students.
Components: LEC.
Grading: GRD.
Typically Offered: Fall, Spring, & Summer.

MGS 795. MPS Internship. 1-6 Credit Hours.
The MPS internship is an approved, supervised internship project with an organization engaged in activities associated with the student's degree track. The internship results in a collaborative project, written report, and oral presentation on a topic approved by the student's advisory committee. Up to 6 credits are necessary for graduation.
Components: PRA.
Grading: SUS.
Typically Offered: Fall, Spring, & Summer.

MGS 810. Master's Thesis. 1-6 Credit Hours.
The student working on their master's thesis enrolls for credit, in most departments not to exceed six, as determined by their advisor. Credit is not awarded until the thesis has been accepted.
Components: THI.
Grading: SUS.
Typically Offered: Fall, Spring, & Summer.

MGS 820. Research in Residence. 1 Credit Hour.
Used to establish research in residence for the master's degree, after the student has enrolled for the permissible cumulative total in appropriate thesis research. Credit not granted. May be regarded as full-time residence as determined by the Dean of the Graduate School.
Components: THI.
Grading: SUS.
Typically Offered: Fall, Spring, & Summer.

MGS 830. Doctoral Dissertation. 1-12 Credit Hours.
Required of all candidates for the Ph.D. The student will enroll for credit as determined by their 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. 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.
Components: THI.
Grading: SUS.
Typically Offered: Fall, Spring, & Summer.

MGS 850. Research in Residence. 1 Credit Hour.
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.
Components: THI.
Grading: SUS.
Typically Offered: Fall, Spring, & Summer.