



**Halmos College of Natural  
Sciences and Oceanography**

**Graduate Program Catalog  
2017-2018**

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## **1.0. Halmos College of Natural Sciences and Oceanography Overview**

### ***1.1 Nondiscrimination Statement***

Consistent with all federal and state laws, rules, regulations, and/or local ordinances (e.g., Title VII, Title VI, Title III, Title II, Rehab Act, ADA, and Title IX), it is the policy of Nova Southeastern University not to engage in any discrimination or harassment against any individuals because of race, color, religion or creed, sex, pregnancy status, national or ethnic origin, non-disqualifying disability, age, ancestry, marital status, sexual orientation, unfavorable discharge from the military, veteran status, or political beliefs or affiliations, and to comply with all federal and state nondiscrimination, equal opportunity, and affirmative action laws, orders, and regulations. This nondiscrimination policy applies to admissions; enrollment; scholarships; loan programs; athletics; employment; and access to, participation in, and treatment in all university centers, programs, and activities. NSU admits students of any race, color, religion or creed, sex, pregnancy status, national or ethnic origin, non-disqualifying disability, age, ancestry, marital status, sexual orientation, unfavorable discharge from the military, veteran status, or political beliefs or affiliations, to all the rights, privileges, programs, and activities generally accorded or made available to students at NSU, and does not discriminate in the administration of its educational policies, admission policies, scholarship and loan programs, and athletic and other school-administered programs. The university's nondiscrimination statement is taken from the NSU Student Handbook, which is the official source of this policy.

### ***1.2. NSU Accreditations***

Nova Southeastern University is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award associate, baccalaureate, masters, educational specialist, doctorate, and professional 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 Nova Southeastern University.

### ***1.3. Nova Southeastern University***

The Halmos College of Natural Sciences and Oceanography (HCNSO) offers degree and certificate programs in biology, ocean science, marine biology, mathematics, chemistry, physics, and environmental science within Nova Southeastern University (NSU): a not-for-profit, fully accredited, coeducational university. It is one of 284 colleges and universities statewide, and one of 119 independent four-year institutions in Florida. NSU is one of 50 universities in the nation with both the Carnegie classification of high research activity and community engagement.

NSU was founded in 1964 as Nova University of Advanced Technology. In 1974, the board of trustees changed the university's name to Nova University. In 1994, Nova University merged with Southeastern University of the Health Sciences to form Nova Southeastern University.

NSU is well known for innovation and quality in both traditional and online education. The university serves large numbers of adult students and a strong population of traditional undergraduates. To date, the institution has produced more than 172,000 alumni.

NSU is classified as a research university with “high research activity” by the Carnegie Foundation for the Advancement of Teaching, and it is one of only 37 universities nationwide to also be awarded Carnegie’s Community Engagement Classification. NSU is the largest private, not-for-profit university in Florida with nearly 25,000 students, and is the largest in the United States that meets the U.S. Department of Education’s criteria as a Hispanic-serving Institution.

The university awards associate’s, bachelor’s, master’s, specialist, doctoral, and first-professional degrees in a wide range of fields, including the humanities, biological and environmental science, business, counseling, computer and information sciences, conflict resolution, education, family therapy, medicine, dentistry, various health professions, law, marine sciences, performing and visual arts, psychology, and other social sciences. Nova Southeastern University has the only college of optometry in Florida, and one of only two colleges of pharmacy in South Florida. The institution also enjoys an excellent reputation for its programs for families offered through the Mailman Segal Center for Human Development and the University School. These include innovative parenting, preschool, primary, and secondary education programs, and programs across the life span for people with autism.

Nova Southeastern University (NSU) maintains four campuses in the Miami to Fort Lauderdale area – the Fort Lauderdale- Davie Campus, the East Campus in Fort Lauderdale, the North Miami Beach Campus, and the Oceanographic Campus in Hollywood, FL. The university also have campuses in the Florida cities of Miami (Kendall), Jacksonville, Orlando, Tampa, Fort Meyers, Miramar, and Palm Beach, and its newest campus in San Juan, Puerto Rico. Eighty-three percent of all students enrolled attend classes in the tri-county area (i.e., Miami-Dade, Broward, and Palm Beach counties), which makes Nova Southeastern University a major provider of educational programs for Florida residents. With an annual budget of over \$600 million, Nova Southeastern University also has a significant economic impact on the surrounding community.

#### **1.1.1. University Facilities**

The university offers degree programs and continuing education opportunities on four campuses in the Miami-Fort Lauderdale metropolitan statistical area (MSA).

##### **The Fort Lauderdale/Davie Campus**

The Fort Lauderdale/Davie campus in Davie, Florida, consists of 314 acres with general-purpose athletic fields and NCAA Division II-qualifying soccer and baseball fields. Facilities house the central administration offices; the Health Professions Division; College of Arts, Humanities, and Social Sciences, H. Wayne Huizenga College of Business and Entrepreneurship, College of Psychology, Shepard Broad College of Law, College of Engineering and Computing, Mailman Segal Center for Human Development, and NSU University School (grades pre-k–12); the Alvin Sherman Library, Research, and Information Technology Center; the Miami Dolphins Training Facility; the Don Taft University Center; and University Park Plaza.

The state-of-the-art, 366,000-square-foot University Center features three NCAA competition courts in the main arena, as well as two intramural courts, group fitness and instruction rooms, cardio and weight training areas, squash courts, a rock climbing wall, and The Flight Deck.

The Performing and Visual Arts Wing of the Don Taft University Center is managed by the College of Arts, Humanities, and Social Sciences. It houses the college's Department of Performing and Visual Arts and includes state-of-the-art classrooms and facilities that support the department's art, dance, music, and theatre majors. The Performing and Visual Arts Wing features

- a 230-seat performance theater with full staging capacity for recitals, concerts, plays, films, and lectures
- a 100-seat black box theater with flexible seating arrangements for multiple staging options
- academic support facilities for the performing arts, including professional-caliber scene and costume shops; a scenic design lab; dance studios; choral
- and instrumental rehearsal rooms; music practice studios; and acoustic, percussion, and keyboard technology labs
- visual arts classrooms that support painting, drawing, ceramics, and graphic design
- a gallery for the display of private art collections, photography, and student artwork
- There is also a new outdoor aquatic center with an Olympic-sized swimming pool and integrated dive well.

In addition, seven residence halls on the Ft. Lauderdale/Davie campus serve undergraduate, graduate, health professions, and law students, with a capacity for housing nearly 1,500 students in approximately 207,000 square feet of living space.

The Rolling Hills Graduate Apartment Complex can accommodate up to 373 graduate students in fully furnished, single and quad rooms. On the Fort Lauderdale/Davie campus, the Cultural Living Center has 135 furnished single and double apartments for upper-level undergraduate and graduate students.

NSU's Health Professions Division complex is located at the northwest corner of the Ft. Lauderdale/Davie campus. The complex includes eight buildings totaling more than 540,000 square feet of space for administrative offices, classrooms, laboratories, the Health Professions Division Library, and a patient-services clinic. In addition, there is a 600,000-square-foot parking structure with space for 2,000 vehicles.

Set to open in September 2016, NSU's Center for Collaborative Research (CCR) will be one of the largest and most advanced research facilities in Florida at 215,000 square feet. The CCR will provide wet and dry labs for many of NSU's innovative companies, and the NSU Cell Therapy Institute. The CCR will also house NSU's Institute for Neuro-Immune Medicine; NSU's Rumbaugh-Goodwin Institute for Cancer Research; the Emil Buehler Research Center for Engineering, Science, and Mathematics; and the U.S. Geological Survey (USGS), which partners with NSU on collaborative interdisciplinary research involving greater Everglades restoration efforts, hydrology and water resources, and more.

In addition to the Fort Lauderdale/Davie campus, the university has permanent facilities in Fort Lauderdale, Hollywood-Dania Beach, and North Miami Beach. These locations are all within 20 miles of the Fort Lauderdale/Davie campus.

### **East Campus**

The East campus is located in Fort Lauderdale, six miles from the Ft. Lauderdale/Davie campus. The campus is located on 10 acres and has 8 buildings that provide 104,000 square feet of office and classroom space. Facilities house the university's financial operations, the student educational center administration, human resources, the university call center, the Transitional Use Program, and Alumni Hall.

### **North Miami Beach Campus**

The 18-acre North Miami Beach campus is home to the Abraham S. Fischler School of Education; dental medicine, family medicine, and optometry clinics operated by the Health Professions Division; the Teacher Imaginarium, a free store for teachers; the South Florida School Choice Resource Center; and the Center for Assessment and Intervention. Overall, the facility includes four buildings totaling 266,500 square feet.

### **NSU Art Museum**

The NSU Art Museum was founded in 1958, and has been housed since 1986 in a distinguished modernist building designed by Edward Larrabee Barnes. The museum building encompasses 94,500 square feet on three levels, of which 35,000 square feet is exhibition space used for the display of art. The adjacent Horvitz auditorium, which contains 256 seats, is used for a variety of presentations and performances, including lectures, films, concerts, and theatrical events.

The AutoNation Academy of Art and Design underwent a major expansion during 2011. The facility provides studio space for a curriculum that includes classes in painting, drawing, sculpture, photography, ceramics, design, and computer arts. Classes are geared to adults as well as to elementary and secondary school children. NSU also maintains space in the Museum Tower. The Museum Tower is the home of the Division of Advancement and Community Relations as well as a satellite office for the president.

### **Technology Facilities**

The university maintains an extensive information technology network for teaching and learning, research, and administrative computing. Comprehensive fiber-optic and wireless networks provide connectivity for user access. A dedicated wide area network (WAN) supports high-speed access to central computing resources from all campuses. NSU WINGS, the university's wireless networking system, provides students with mobile network connectivity in more than 45 buildings and four exterior locations covering all of the university's campuses and student educational centers throughout Florida. High-speed Internet access is provided to both on-campus and remote sites.

NSU is an equity member of the Florida LambdaRail (FLR), a not-for-profit, limited liability corporation currently composed of 12 public and private, not-for-profit Florida universities. The FLR operates a statewide, high-performance, fiber-optic network infrastructure that utilizes next-generation network technologies, protocols, and services. The FLR provides NSU with high-speed commercial Internet services and connectivity to advanced regional and national networks, such as the National LambdaRail (NLR) and the Abilene Internet2 backbone. The FLR has significantly enhanced university research and online-

education capabilities and allows NSU faculty and staff members, researchers, and students to collaborate with colleagues around the world on leading-edge research projects.

Students, faculty and staff members, and administrators have access to university computing resources from desktop and laptop computers, while numerous microcomputer labs are conveniently located throughout university facilities for student use. Administrative computing resources consist of multiple Oracle Enterprise servers and numerous other application-specific Linux and Microsoft Systems. The university's administrative operations are supported by the Ellucian Banner system. Additional administrative systems include imaging systems; campus card systems; facilities systems; procurement systems; time/effort; and medical, dental, optometry, and mental health clinic systems. Multiple Oracle servers support academic applications and World Wide Web-based tools. Microsoft Exchange email systems support all faculty and staff member email services, while Microsoft Live@edu provides email services to NSU students. Synchronous and asynchronous Web tools are used for the delivery of online education. Electronic classrooms and microcomputer labs provide hands-on technology support for students and faculty members. Multimedia technology training labs support technology-training opportunities for faculty and staff members.

#### ***1.4. Location***

The NSU Oceanographic Campus occupies 10 acres within Von D. Mizell and Eula Johnson State Park (formerly John U. Lloyd State Park) at Port Everglades in Dania Beach, Florida. The Oceanographic Campus' facilities are composed of three buildings and a modular encompassing 27,000 square feet and the impressive, state-of-the-art, 86,000-square-foot Guy Harvey Oceanographic Center Building research facility, partially funded by a \$15-million grant from the National Institute of Standards and Technology. Space exists for offices, classrooms, a library, and research laboratories. The center's proximity to the ocean is ideal for field studies.

#### ***1.5 Graduate Programs in Halmos College of Natural Sciences and Oceanography***

The graduate programs are housed in two departments. The M.S. in Biological Sciences and the graduate certificate in Computational Molecular Biology are housed in the Department of Biological Sciences. The M.S. degree in Marine Science with concentrations in Marine Biology, Marine Environmental Sciences, or Coastal Zone Management and the Ph.D. in Oceanography/Marine Biology are housed in the Department of Marine and Environmental Sciences.

##### **1.5.1 Department of Biological Sciences Mission Statement**

The Mission of the Department of Biological Sciences (DoBS) is to provide students with a strong foundation in biology at the undergraduate and graduate levels. The Department is committed to excellence in teaching, research and service, providing opportunities and connections for current students and graduates to achieve success in their careers.

##### **1.5.2 Department of Marine and Environmental Sciences Mission Statement**

The Mission of the Department of Marine and Environmental Sciences (DoMES) is to carry out innovative, basic and applied research and to provide high-quality graduate and undergraduate education in a broad



range of marine and environmental sciences and related disciplines. The Department also serves as a community resource for information, research and education on oceanographic and environmental issues.

## **1.6. Research Activities**

The Halmos College of Natural Sciences and Oceanography has under its former name (NSU Oceanographic Center) a 50-year history of research excellence. Faculty and students at the Department of Marine and Environmental Sciences pursue studies and investigations in experimental, observational, and theoretical oceanography. Research interests include biological and chemical oceanography; coral reef ecology, assessment, restoration, and monitoring of marine and terrestrial systems; sea level change; benthic ecology; marine plankton; invertebrate systematics and phylogeny; calcification of invertebrates; cell ultrastructure; marine fisheries; anatomy and physiology of marine vertebrates; molecular ecology and evolution; wetlands ecology; marine mammals; modeling of large-scale ocean circulation; coastal dynamics; ocean-atmosphere coupling, and surface gravity waves. Research on land regards landscape evolution, sedimentary depositional patterns, and the study of population biology of endangered vertebrates. Regions of interest include not only Florida's coastal waters and the continental shelf/slope waters of the southeastern United States, but also the waters of the Caribbean Sea, the Gulf of Mexico, and the Atlantic, Indian, and Pacific Oceans. In particular, the Environmental Sciences focusses heavily on Florida ecosystems, such as the Everglades.

The M.S. in Biological Sciences program offers a unique student centered opportunity to engage in cutting-edge research. This relatively new program builds upon the strong culture of research excellence established by the Oceanographic Campus and allows students to engage in research that is not marine biology focused. Currently, areas of research include animal behavior; synthetic biology; systems biology; genomics; microbiology/microbiome; parasitology; physiology and non-marine zoology. Furthermore, the program offers opportunities to interact and collaborate with researchers at the Cell Therapy Institute and the Institute for Neuro-Immune Medicine. Research in these Institutes requires a multidisciplinary approach to study diverse organismal systems, the results of which could advance both human biomedical and environmental research priorities. Specific research topics, and past publications can be found at <http://nsuworks.nova.edu/cnso/>.

## **1.7. Facilities**

### **1.7.1. Laboratories and Offices**

The Oceanographic Campus is a multi-disciplinary facility, located between the Atlantic Ocean and Port Everglades. The Oceanographic Campus boasts multiple conference and class rooms, an electron microscopy laboratory, a machine shop, an electronics laboratory, a coral workshop, filtered seawater facilities, graduate student center, working biology laboratories, a marine science library, an 85-seat auditorium, and offices for faculty and staff members, all connected with wired and wireless networks. The campus has an on-site, one-acre marina and several research vessels and dive boats with a SCUBA filling station, space for research collaboration, training, and fieldwork staging. The campus design promotes research by current and new faculty, researchers, visiting scientists, post-doctoral fellows, and graduate students.

Biology laboratories in the College contain state of the art equipment facilitating the study of some of the most pertinent question in biology. Students in the M.S. Biological Sciences program, have the opportunity to work directly with equipment including an Illumina MiSeq DNA sequencer, fully automated microplate readers, qPCR machines, and a host of microscopes including fluorescent, electron, and high-resolution/magnification light. These pieces of major equipment are complemented with well stocked laboratories that contain supporting equipment including biological hoods, PCR machines, nucleic acid spectrophotometer and fluorometer, -80C freezers, cold rooms, gel electrophoresis and other instruments. Faculty actively collaborate with additional diverse NSU investigators and laboratories, allowing us access to other instruments, including computational clusters, automated nucleic acid extraction platforms, cell sorters and flow cytometers.

### **1.7.2. Library Resources**

The Nova Southeastern University Oceanographic Campus Library is located on the 4<sup>th</sup> Floor of the Guy Harvey Oceanographic Center building at the Halmos College of Natural Sciences and Oceanography (HCNSO) in Dania Beach, FL. This marine, aquatic, and environmental sciences library serves the research needs of NSU faculty, staff, researchers, and students. The library is open 59 hours a week (Monday-Saturday) and provides a myriad of print and online resources, guides, tutorials, collections, and materials. The library also provides technology onsite, including 10 computers with various software (i.e. ArcGIS, Photoshop, statistical software, etc.), a KIC Scanner, a color LaserJet printer, and tablets available for checkout. Within the library there are numerous study spaces, including tables for groups or projects, study carrels, reading chairs, and a quiet study area.

The Oceanographic Campus Library print collection (including monographs, periodicals, reference, and theses/dissertations) contains over 17,000 volumes. The online collection currently contains over 3,300 e-journal subscriptions to marine/ocean specific titles and provides access to over 144,000 academic ebooks and 500 research databases through the NSU Libraries. Additionally, faculty and student scholarship is available online via NSU's institutional repository, NSUWorks, and the HCNSO collections can be accessed at: <http://nsuworks.nova.edu/cnso/>. This includes digital collections, faculty publications, conferences, student work (such as theses and dissertations), and HCNSO publications and journals.

As a part of the NSU Libraries, Oceanographic Campus patrons may request items to be sent from the main campus libraries for their use as well as submit requests via the Interlibrary loan (ILL) service that is available for receiving books and/or copies of journal articles from other libraries around the country that are not available from the NSU Libraries. In addition to the ILL services, the librarians are members of the International Association of Aquatic and Marine Science Libraries and Information Centers (IAMSLIC), and SAIL, its regional branch, which provides access to additional marine and aquatic library collections and resources from around the world.

Link to Oceanographic Campus Library resources: <http://nova.campusguides.com/oclibrary>.

Located at the main campus in Davie, the 325,000-squarefoot Alvin Sherman Library, Research, and Information Technology Center is a joint-use facility with the Broward County Board of County Commissioners. It serves students and faculty and staff members of NSU, as well as residents of Broward

County. The five-story structure contains electronic classrooms, group-study rooms, a cafe, and service desks with staff trained and ready to serve library users. Collections of library resources support the research of students and faculty and staff members. A large, spacious atrium houses educational art pieces. The reference desk is located on the second floor, clearly visible to students. It is enhanced by the NSU Glass Garden, created by glass artist Dale Chihuly for the Sherman Library.

### **1.7.3. Computer Resources**

For faculty and student computing, the Department of Marine and Environmental Sciences has approximately 150 PC's on a LAN connected to Ft. Lauderdale/Davie campus and the Internet. The student computer lab has 20 individual computer stations with networked Intel dual-core or higher computers connected to a HP LaserJet printer. Various peripherals throughout the campus include an HP 5200z large format poster printer, a high-resolution color flatbed scanner, and assorted imaging software and hardware.

The Oceanographic Campus is linked to the Internet and NSU Ft. Lauderdale/Davie campus via a 1GB/sec network link. A wireless network allows indoor and outdoor access to the Internet from any location at the campus. A GUEST wireless network is also available to visiting students and researchers. The Web site is located at <http://cnso.nova.edu/>.

Students, faculty and staff members, and administrators have access to university computing resources on main campus in Davie, including desktop and laptop computers and document printers and copiers. Numerous computer labs are conveniently located throughout the university's facilities for student use. Electronic classrooms and microcomputer labs provide hands on technology support for students and faculty members.

## **1.8. Institutes**

### **1.8.1. National Coral Reef Institute**

The National Coral Reef Institute (NCRI) was established by Congressional mandate in 1998. The Institute's primary objective is the assessment, monitoring, and restoration of coral reefs through basic and applied research and through training and education. NCRI operates at Nova Southeastern University's Department of Marine and Environmental Sciences near Fort Lauderdale, Florida.

#### ***Mission***

NCRI's mission is to identify gaps and constraints in scientific knowledge of reef structure and function as it relates to issues of assessment, monitoring, and restoration. Through active research and collaborative funding, NCRI undertakes and facilitates hypothesis-based scientific research in emerging reef issues and technologies. NCRI provides scientific synthesis and evaluation criteria of existing programs for use by the research and management community. These include the study of minimally impacted, stressed, and imminently threatened and endangered reefs. Assessing and monitoring biodiversity is a priority, especially as it affects and interacts with ecological processes, overall reef function, reef recovery, and

restoration. NCRI's primary capability is that of offering a strong scientific focus as well as innovative approaches to relevant scientific issues in all aspects of coral reef biology.

More information about NCRI can be found at [www.nova.edu/ocean/ncri](http://www.nova.edu/ocean/ncri).

### **1.8.2. Guy Harvey Research Institute**

The NSU Guy Harvey Research Institute (GHRI) is a scientific research organization based at the Oceanographic Campus. GHRI was established in 1999 through collaboration between the renowned marine artist Dr. Guy Harvey and NSU's then Oceanographic Campus. The Institute is one of only a handful of private organizations dedicated exclusively to expanding the scientific knowledge base for effective conservation of fish populations and maintenance of fish biodiversity.

#### ***Mission***

The NSU Guy Harvey Research Institute (GHRI) conducts high quality, solution-oriented, basic and applied scientific research needed for effective conservation, biodiversity maintenance, restoration, and understanding of the world's wild fishes. The GHRI also provides advanced scientific training to U.S. and international students who will serve as future stewards of the health of our oceans.

More information about GHRI can be found at [www.nova.edu/ocean/ghri](http://www.nova.edu/ocean/ghri).

### **1.8.3 Broward County Sea Turtle Conservation Program**

NSU Halmos College of Natural Sciences and Oceanography operates the Broward County Sea Turtle Conservation Program in partnership with Broward County government. The program provides for the conservation of endangered and threatened sea turtle species within Broward County. While 70% of the nation's sea turtle nesting occurs in Florida, Broward County serves as a normal nesting area of three specific species of sea turtles: the loggerhead sea turtle is listed as threatened; and the green and leatherback sea turtle, which are listed as endangered and critically endangered, respectively. By monitoring nests and creating public awareness, the Broward County Sea Turtle Conservation Program (BCSTCP) helps protect these fragile creatures.

An associated part of this effort is the Carpenter House: Marine Environmental Education Center (MEEC), which the Halmos College of Natural Sciences and Oceanography manages on behalf of Broward County to expand education and outreach about its sea turtles and other valuable marine resources.

### ***1.9 Faculty and Staff***

Information about the faculty including their background, the courses they teach, and their research interests, as well as links to their specific web sites, can be found at <http://cnso.nova.edu/overview/faculty-staff-profiles/index.html>. Information about staff and their positions is also located there.

## 2.0. Academic Programs

The academic arm of the Department of Marine and Environmental Sciences and the Department of Biology are headed by the respective Department Chairs who are responsible for the academic programs. All certificate and degree programs offered by the Departments are detailed in this catalog.

### 2.1. Programs and Majors

The Halmos College of Natural Sciences and Oceanography (HCNSO) offers a doctorate degree (Ph.D.) in Oceanography (with emphasis on Marine Biology or Physical Oceanography) and Master of Science (M.S.) degree in Biological Science (concentration in Health Studies, or research track), and Marine Science (with concentrations in Marine Biology, Coastal Zone Management, or Marine Environmental Sciences). Joint concentrations in the Marine Science degree can be obtained by taking an additional three courses in the additional area. A graduate certificate in Computational Molecular Biology is offered. More information about the certificate can be found in [section 3.8 of this catalog](#).

This catalog provides guidelines and rules to assist the student in fulfilling the academic requirements of the M.S. and Ph.D. degrees. The marine science M.S. major and the Ph.D. course of study contain a common core of six courses (Physical Oceanography, Marine Ecosystems, Marine Geology, Marine Chemistry, Biostatistics, and Scientific Communication) that provides an overview and foundation in the ocean sciences. The Biological Sciences require five core courses (Marine Genomics, Scientific Communication, Biodiversity, Biostatistics, and Scientific Method and Experimental Design). Specialty and tutorial courses provide depth in each program. The HCNSO operates on a trimester system. The Fall and Winter semesters are split into one 16 week term- and two 8-week sessions. The summer semester is 14 weeks in length.

For graduation, students must fulfill the curriculum and course-load requirements of the catalog in effect at their initial registration or that of any later-edition catalog. Other than curriculum and course-load, graduate students are responsible for requirements set forth in the most recent edition of this catalog, unless exceptions are specifically (and individually) approved by the program administration. Updates may be issued at the HCNSO between catalog publications. Copies of the catalog and updates are located on the college website (<http://cnso.nova.edu/academics/course-catalog/>)

The core courses are typically taught in the 16-week term in either a day or evening format that will meet once per week for 2.5 hours. The elective courses are typically taught in an 8-week session in either a day or evening format that will meet twice per week for 2.5 hours. However, not all core courses are taught as semester courses, and not all electives are taught as term I or term II courses. Thesis and Capstone tracks are offered in all MS majors.

For completion of the M.S. degree, students must submit an approved Thesis, or Capstone research project. For further details, students are referred to section [3.7 of this catalog](#) and to the online guidelines for the capstone or thesis track found on the HCNSO Student Information page at: <http://cnso.nova.edu/tools-resources/students.html>.

Both the thesis and capstone track require a minimum of 38 credits, including six 3-credit core classes, four 3-credit electives, and at least 8-credits of thesis or capstone. Once a student starts registering for thesis/capstone credits, they cannot stop registering for credits until the research project is completed and defended. The completed research project is formally defended in an open defense that includes the student's advisory committee.

Students are allowed to take one elective outside their selected concentration and have the course count towards their final credit count.

If students are interested in completing the M.S. in Marine Science with a **joint concentration**, they will be required to take at least 3 courses outside of their intended concentration in conjunction with their four electives in their primary concentration.

For both the capstone and the thesis degree tracks, once the proposal has been accepted, enrollment in the chosen track must continue until completion of the degree.

The Ph.D. degree requires a minimum of 90 credits beyond the baccalaureate. At least 42 credits must consist of upper-level course work. At least 24 credits must consist of dissertation research. The student may not register for research credits (DIS) until after successfully defending the research proposal. After faculty acceptance of the research proposal the student must register for a minimum of 3 research credits per session until completion of the degree.

As part of the core curriculum, M.S., and Ph.D. students must also complete a 0-credit/0-cost seminar series to graduate and are required to attend a minimum of 8 seminars. Students can also fulfill this requirement online using Blackboard and SharkMedia if they are unable to attend in person.

### **2.1.1. M.S. Marine Science Concentrations**

**Marine Biology:** This course of study is designed to equip students with a substantial understanding of the nature and ecology of marine life and grounding in the other overlapping areas of marine science. Program flexibility provides preparation for further graduate study, secondary education career enhancement, or employment in technical research institutions, government agencies, or environmental consulting firms. Applicants should hold a bachelor's degree in biology, oceanography, or a closely related field, including science education.

**Coastal Zone Management:** This course of study focuses on contemporary problems and conflicts arising from increased use of coastal areas and emphasizes the evaluation of alternative policy management solutions. It is intended for employees of government and industry seeking career enhancement, as well as for recent college graduates seeking careers in planning and management with government agencies, industries, and other activities depending on or affecting the coastal zone or its resources. The program can also be of value for enhancement of careers in education.

**Marine Environmental Science:** Graduates can find employment in environmentally oriented agencies/organizations and the program is of value for prospective or actual employees of government

and industry seeking to advance careers in marine-related areas. Applicants are required to have a degree in the natural sciences.

Expected outcomes of the Marine Biology concentration are:

- Students will achieve and maintain a high cumulative grade point average (GPA  $\geq$  3.0) from course grades earned throughout the program.
- The combination of courses comprising the degree ensures that students acquire and demonstrate
  1. Effective communication skills
  2. A full understanding of the scientific method
  3. Competency in geological and chemical concepts as they relate to marine biota
  4. An understanding of the taxonomy, natural history, and ecology of marine organisms
  5. In-depth knowledge of a specific aspect of marine biology
- Completion of the degree is expected to lead to: placements in the chosen field, in a position requiring graduate training; career advancement in the case of working professionals; and/or advanced graduate training (Ph.D.).
- Students are expected to complete the degree within 2 years of full-time study, and within 5 years of part-time study.

Expected outcomes of the Coastal Zone Management concentration are:

- The combination of courses comprising the degree ensures that students acquire and demonstrate
  1. Effective communication skills
  2. A full understanding of the scientific method
  3. Competency in ecological, geological, chemical and biological concepts, as they relate to resource management in the coastal zone
  4. An understanding of coastal zone processes
  5. Familiarity with current management problems and approaches to their solution
  6. In-depth knowledge of a specific aspect of coastal zone management
- Completion of the degree is expected to lead to: placements in the chosen field, in a position requiring graduate training; career advancement in the case of working professionals; and/or advanced graduate training (Ph.D.).
- Students are expected to complete the degree within 2 years of full-time study, and within 5 years of part-time study.

Expected outcomes of the Marine Environmental Science concentration are:

- Students will achieve and maintain a high cumulative grade point average (GPA  $\geq$  3.0) from course grades earned throughout the program.
- The combination of courses comprising the degree ensures that students acquire and demonstrate
  1. effective communication skills
  2. a full understanding of the scientific method
  3. a generalized knowledge in ecological, geological, chemical and biological concepts as they relate to the marine environment

4. a generalized knowledge of the natural and human-driven problems currently impacting, and anticipated to impact, the marine environment
  5. in-depth knowledge of a specific aspect of marine environmental sciences
- Completion of the degree is expected to lead to: placements in the chosen field, in a position requiring graduate training; or to career advancement in the case of working professionals.

### **2.1.2 M.S. Biological Sciences (BMME)**

The M.S. in Biological Sciences provides both a traditional biological curricula and innovative approaches to instruction with a specialization in molecular biology. The students take core and elective courses spanning a wide range of disciplines, from molecular, through organismal, to ecosystem-level biology. This rigorous curriculum provides a practical foundation that can be applied as an entry point or terminal degree to professional careers in biomedicine, biotechnology and environmental biology.

The M.S. in Biological Sciences is not a lock-step program and offers both thesis and capstone (non-thesis) tracks. The capstone track will require 45 credit hours (12 hours of core courses, 27 hours of electives, and a minimum of 6 hours of capstone). The theses track will require 39 credit hours for completion (12 hours of core courses, 18 hours of electives, and a minimum of 9 hours of theses) and also the approval of a Halmos College of Natural Sciences and Oceanography (HCNSO) faculty member to advise and support a specific research project.

### **2.1.3. Graduate Certificate**

The Halmos College of Natural Sciences and Oceanography (HCNSO) offers a Graduate Certificate program in Computational Molecular Biology. It is awarded upon successful completion (defined as a course grade of C or better) of four courses at the graduate level. Courses do not have to be taken within any one term, or consecutively, but the Certificate must be completed within 5 years of admission. Successful completion of the Graduate Certificate will award the equivalent of 12 graduate credits.

#### **Required Courses:**

Four Courses (2 computer science & 2 molecular biology):

1. BCOR 5585: Genomics
2. BMME 8050 (MSIT 501): Foundations of Programming
3. BMME 8051 (MMIS 630): Database Management and Applications
4. BMME 8053: Introduction to Bioinformatics

The goal of the Graduate Certificate is to provide:

- A scientifically-based, credible, holistic and timely introduction and knowledge of key ecological and socio-environmental issues related to the oceans and coastal zone.
- A forum for sharing national and international perspectives, information and case studies concerning the coastal and marine environment.
- A stand-alone credible Graduate Certificate for working professionals and college graduates in a variety of related fields, and a basis for potential further graduate study towards a full Master's degree.



#### **2.1.4. Ph.D. in Oceanography/Marine Biology**

The Ph.D. degree consists of a program of upper-level course work and original research on a selected topic of importance in the ocean sciences. Courses consist of required general core courses as well as tutorial studies with the major professor. Ph.D. programs are informally divided into physical oceanography and marine biology.

A successful recipient of the Ph.D. degree in Oceanography/Marine Biology is expected to:

- Understand basic marine biological, chemical, geological, and physical processes to a level sufficient to communicate and collaborate with experts in those sub-disciplines; and to be able to apply this knowledge to issues in research and resource management
- Apply the scientific method to define, investigate, and evaluate hypotheses in at least one of these sub-disciplines
- Conduct (as guided by, and to the satisfaction of, the doctoral committee and HCNSO faculty) advanced, original, and independent research that adds to the body of oceanographic knowledge in one or more of the sub-discipline areas
- Communicate scientific results and conclusions clearly and logically in a written dissertation and in scientific presentations and publications
- Students are expected to complete degrees within 5 years of full-time study, and within 9 years in the case of part-time students. A minimum of 3 years enrollment in the Ph.D. program is required.

#### **2.1.5. Assessments of Learning Outcomes**

Prior to graduation all Masters Students must take a pass/fail test on the learning outcomes of their program. Students failing the test will be required to retake it prior to graduation; the test may be retaken multiple times. After finishing all coursework and prior to the oral defense of thesis or capstone the student will take a closed-book written test. Students may schedule the exam online at <http://nsuoc.wufoo.com/forms/rubric-schedule-request>. Once information is submitted the student will receive a confirmation email with a link to schedule the exam.

The questions will concern general knowledge (specifically, the material learned in all 6 core courses and 4 electives) and will be directed at the learning outcomes of the individual courses.

### **3.0. Graduate Educational Programs**

#### **3.1. Admission**

##### **3.1.1. Application**

Prospective students may apply at any time during the year and, if accepted, may begin at any term during the year of acceptance or the following year.

- Applications must be submitted online at <http://apply.nova.edu>
- For online directions please visit <http://cnso.nova.edu/admissions/masters.html>

- Prospective international students are encouraged to visit the link at:  
<http://cnsn.nova.edu/admissions/international-students.html>

The \$50 application fee can be paid online via credit/debit card or e-check. Any additional application materials must be completed and mailed to the following address. Please be sure to include your NSU ID on all documents.

HCNSO Graduate Program Office  
Nova Southeastern University  
Halmos College of Natural Sciences and Oceanography  
8000 North Ocean Drive  
Dania Beach, FL 33004

It is the responsibility of the applicant to obtain the supporting documents required for application.

For international students wishing to come to the Halmos College of Natural Sciences and Oceanography (HCNSO) for study, the student I-20 visa may be issued only upon completion of all admission requirements. Therefore, international students are urged to be sensitive to requirements prior to applying to the program.

The [Office of International Students and Scholars \(OISS\)](#) provides complete support and advisory services. The HCNSO Admissions Office notifies OISS when an applicant has been fully admitted and requires an I-20.

Nova Southeastern University  
Attn: Office of International Students and Scholars (OISS)  
3301 College Avenue  
Fort Lauderdale, Florida 33314  
[www.nova.edu/internationalstudents](http://www.nova.edu/internationalstudents)  
Phone: (954)262-7241 or 1-800-541-6682 x27241 (long distance)  
Email: [intl@nova.edu](mailto:intl@nova.edu)

### **3.1.2. Application Requirements**

To complete an application, prospective students must provide the following documents:

For Non-degree seeking students:

- Application (<http://apply.nova.edu>)
- \$50 Application fee
- Official undergraduate transcript showing Bachelor's degree conferral

For the Graduate Certificate:

- Application (<http://apply.nova.edu>)
- \$50 Application fee

- Official undergraduate transcript showing Bachelor's degree conferral

For M.S. degrees:

- Application (<http://apply.nova.edu>)
- \$50 Application fee
- Statement of career goals
- Official transcripts of all post-secondary schooling, including transcript showing Bachelor's degree conferral
- Three letters of recommendation (on letterhead sent directly to [ocadmissions@nova.edu](mailto:ocadmissions@nova.edu))
- GRE scores (general only)

For Ph.D. degree, all of the above plus:

- Statement of support from the prospective advisor
- Curriculum Vitae (C.V.)
- Research Topic Proposal
- Must show at least 3 years of funding for both salary and research activities

### **3.1.3. Acceptance Status**

If accepted, students are accepted in one of three classifications: full, with academic requirement, and special status.

- Full acceptance is awarded to students satisfying all acceptance criteria (stated below).
- Acceptance with academic requirement is provided to students who have not satisfied all of the criteria, but who have given evidence that they may succeed in the degree program. A 'B' grade or better in the first four courses is required before a student can be converted to Full Acceptance status. An additional writing or science course may be required for admission with academic requirements.
- Special acceptance is reserved for non-degree-seeking students. This status does not preclude applying for full acceptance in any Halmos College of Natural Sciences and Oceanography (HCNSO) Program. *Enrollment in, or satisfactory completion of, courses while in non-degree seeking student status does not guarantee admission to any program.* Although there are no specific admission criteria, non-degree admittance will only be awarded to students that have demonstrated the ability to successfully complete a graduate course. Non-degree seeking students are limited to a total of 2 courses.

When application is complete, students will be notified of the status under which they may register.

### **3.1.4. Acceptance Criteria**

#### **3.1.4.1. M.S. acceptance**

The M.S. degrees in Biological Sciences and Marine Science require a baccalaureate degree in biology or a closely related field. To qualify for Full Acceptance, applicants must submit a transcript for a bachelor's degree with a major GPA of at least 3.0 and a cumulative GPA of 2.9. The prerequisites required for acceptance are as follows:

- Calculus I or higher
- Applied Statistics/Biostatistics
- General Chemistry/Lab
- Biology I/Lab
- Biology II/Lab
- General Anatomy and/or General Physiology and/or General Ecology

The Graduate Record Examination (GRE) requirements are scores of 50% on the verbal portion, 50% on the quantitative portion, and 4.0 on the analytical writing portion for Full Acceptance, and scores of 40% on the verbal portion, 40% on the quantitative portion, and 3.5 on the analytical writing portion for Acceptance with Academic Requirements. A student with lower GRE scores may be accepted if there is evidence they may be able to successfully complete the program (GPA, letters of recommendation, etc.)

### **3.1.4.2. Ph.D. acceptance**

For Ph.D. applicants, previous degree(s) should be in the area of physics or mathematics (for Physical Oceanography) or an appropriate area of the natural sciences (for Marine Biology). A Master's degree in Biological Oceanography, Biology, Marine Biology, or a related science is preferred, especially for the Marine Biology Ph.D.

To qualify for acceptance, applicants must submit a transcript for a master's degree with a cumulative GPA of at least 3.0, and bachelor's degree with a major GPA of at least 3.0 and a cumulative GPA of 3.0.

The Graduate Record Examination (GRE) requirements for acceptance into the Ph.D. program are scores of 55% on the verbal portion, 55% on the quantitative portion, and 4.0 on the analytical writing portion for acceptance. GRE scores older than five years will not be accepted.

Ph.D. applicants need to obtain a written agreement from a prospective faculty member who will serve as Major Professor and submit it with an overview of proposed research. Students are not admitted without prior agreement on a research topic and a Major Professor. Furthermore, the Major Professor will need to state in writing that she/he has or will be able to acquire sufficient funds to cover the Ph.D. student's research expenses for the duration of the student's course of study at the HCNSO. Specifically, at least three years of funding for salary and research activities must be planned prior to acceptance into the Ph.D. program. Halmos College of Natural Sciences and Oceanography will not be responsible for covering research expenses in the event of funding loss by the Major Professor. The Ph.D. candidate is required to defend his or her proposal within the first 12 months.

The application process should be initiated online at <http://apply.nova.edu>. Submit the application package containing letters of recommendation, statement of career goals, GRE scores, undergraduate and graduate transcripts, general research topic, CV, and statement of support from the prospective Major Professor. The statement of support must include how funding for a minimum of three years will be obtained. This package will go to faculty. Acceptance into the Ph.D. program is effectively provisional for all. The accepted student is a "pre-candidate" until the later defense of proposal and successful passing of Comprehensive Exams.

### **3.1.4.3. Graduate Certificate Entrance requirements**

Applicants for the Graduate Certificate are required to have a baccalaureate (four-year degree). They must apply for the certificate at <http://apply.nova.edu> and must submit an official transcript as part of the application process.

### **3.1.5. Class Registration**

It is the student's responsibility to register *prior to* the beginning of class. Students may register online (<http://webstar.nova.edu>) or at the HCNSO Program Office. Payment is due to the Bursar's office upon registration or at least 30 days into the start of the term. Late payment will result in a \$100 late fee. NSU accepts major credit cards, checks, money orders, and financial aid. M.S. students pay tuition each term for their courses, according to the number of credit hours taken. Ph.D. students pay a flat rate per term. In addition to registering, Webstar (<http://webstar.nova.edu>) allows students to update addresses, look at financial aid standings, and view transcripts anytime day or night.

**NOTE: NSU Employees must always register using the online student transaction form (<https://www.nova.edu/webforms/ess/student-transaction-form>).**

### **3.1.6. NSU ID**

To reduce identity theft, NSU has developed its own identification system for all students, faculty, and staff. The NSU ID is a nine-character code that starts with "N" and is followed by 8 digits. This code is created at the time of application and will remain with a student throughout their academic career at NSU. Students who forget their NSU ID may look it up at <https://www.nova.edu/sbin/nsuidhelp>. They will need their social security number and Sharklink PIN; or their NSU email name, NSU email password, and either the last 4 digits of their social security number or the month/day of birth. Students may obtain a SharkCard (NSU ID card) by visiting Campus Card Services in the Don Taft University Center ([www.nova.edu/nsucard](http://www.nova.edu/nsucard)).

Students will need their NSU ID to

- access WebStar for student services, including registration and financial aid
- access NSU Online library resources
- request transcripts
- Access the 2<sup>nd</sup> and 4<sup>th</sup> floors at the GHOC
- Enter the Oceanographic Campus during non-business hours

**Protect Your Identity - Keep Your NSU ID Secure**

### **3.1.7. NSU Email and SharkLink**

A student's NSU Email Name is created automatically when they become a new student of NSU. The NSU Email Name is also the student's SharkLink ID.

The NSU Email Name and Password are used for:

- [SharkLink](#) Login
- [Blackboard](#) login
- NSU Sharkmail Account
- Security access to various NSU Web Applications
- [Retrieve Your SharkLink ID](#)
- [Change Your Password](#)

Please note that all official electronic mail communications directed to NSU students, faculty, and staff members are sent exclusively to NSU email computer account addresses. **Students should use this email address for all university correspondence** (including with faculty). The student email address is available at <http://www.nova.edu/cwis/oit/nsuidentity.html>.

For all policies related to use of an NSU computing account, please see the NSU Student Handbook at [http://www.nova.edu/studentaffairs/forms/studenthbkg\\_aug2017.pdf](http://www.nova.edu/studentaffairs/forms/studenthbkg_aug2017.pdf) and the NSU Policy on Acceptable Use of Computing Resources at [www.nova.edu/common-lib/policies](http://www.nova.edu/common-lib/policies).

### **3.2. Credit-Hour Requirements**

The M.S. in Marine Science degree requires a minimum of 38 total credits, consisting of 10 three-credit courses (including six core (MSMS 5000s) courses), and 8 credits of capstone or thesis minimum. The course requirements are the same for both the thesis and capstone track.

For the M.S. in Biological Sciences (BMME): the program offers both thesis and capstone tracks. The capstone track is the default option and will require 45 credit hours (24 hours of core/required courses, 15 hours of electives, and 6 hours of capstone). The theses track will require 39 credit hours for completion (24 credits of core/required courses, 9 credits of electives, and 6 credits of theses) and also the approval of an HCNSO faculty member to advise and support a specific research project.

#### **3.2.1 Directed Independent Study and Maximum Credits Policy**

Students may take a maximum of one named directed independent study (Special Topics in Marine Science) to fulfill an elective requirement. While students may go at their own pace, selecting the courses and credit hours they wish to take each term to complete the requirements listed above within the required time frame for completion of the degree (see section 3.4), students may not take more than 9 credits per semester. Students may submit a request to the program office to take 12 credits in a semester, under special circumstances, but this allowance is not guaranteed.

### **3.3. Transfer Credit Policy**

#### **3.3.1. Transfer of Credits to Halmos College of Natural Sciences & Oceanography**

M.S. students may transfer up to six credits of previous graduate course work. Course work must replicate HCNSO offerings in the major field of interest or must clearly be closely related. Students should submit requests for transfer credits in writing to the Program Office with documentation indicating the subject

matter and that the transfer credits were of graduate level from accredited institutions. This can consist of the course syllabus, transcripts, and/or the course description from the professor.

Ph.D. students may transfer up to 30 graduate course credits from prior graduate programs in the same discipline as the Ph.D. degree aspired to. Transfer courses must be either reasonable duplicates of courses offered at NSU or clearly in the applicable Ph.D. field of interest. Students should submit requests for transfer credits in writing to the Program Office with documentation indicating the subject matter and that the transfer credits were of graduate level from accredited institutions. This can consist of the course syllabus, transcripts, and/or the course description from the professor.

Transfer acceptability for both the M.S. and Ph.D. programs will be decided by the Department Chair at the HCNSO.

### **3.3.2. Transfer of Credits from Halmos College of Natural Sciences & Oceanography**

Nova Southeastern University has no control over acceptance of course credits at other institutions. Credits earned at HCNSO are transferable to other institutions at the discretion of the receiving school.

### **3.4. Time Limits**

The maximum time limit for completion of the M.S. programs is nine years. M.S. students must petition the program office in writing for an extension of the time limit, which may be granted only under extenuating circumstances. There is no minimum time limitation for completion of the M.S.

Ph.D. students are expected to complete the program in nine years; a minimum of three years is required. Students must petition the program office in writing for an extension of the time limit, which may be granted only under extenuating circumstances.

### **3.5. Tuition, Fees, Withdrawal, Leaves of Absence**

#### **3.5.1. Tuition and Fees**

Tuition and fees are listed at <http://cnso.nova.edu/admissions/tuition-fees.html>. Payment is due at the time of registration and is considered past due 30 days after the start of the semester. An email will be sent to the student 20 days after the first day of the semester reminding of the approaching late fee date. NSU offers a 3-Month (one semester) and a 10-Month (fall and winter semester combined) Payment Plan. For more information, visit the NSU Payment Plans Web page ([www.nova.edu/bursar/payment/payment\\_plans.html](http://www.nova.edu/bursar/payment/payment_plans.html)). International students are not eligible. For more information about billing and payments, please visit the NSU Bursar's Office at [www.nova.edu/bursar/index.html](http://www.nova.edu/bursar/index.html) or contact them at

Nova Southeastern University  
University Bursar  
3301 College Avenue  
Ft. Lauderdale, FL 33314  
(954) 262-5200  
800-541-6682, ext. 25200  
[bursar@nova.edu](mailto:bursar@nova.edu)

### 3.5.2. Student Enrollment Agreement (SEA)

All students must complete the new Student Enrollment Agreement (SEA) form in order to register for classes. The SEA requires students to agree with NSU standards and policies regarding course registration and withdrawal, financial responsibility, a release of liability, and more. Students registering for courses will be prompted to complete the form as part of the registration process on [Sharklink](#) and [Webstar](#). **Students must complete the SEA or course registration will not occur.**

To complete the SEA, follow the steps below once registration has opened:

- Log in to [Webstar](#).
- Locate the **Students** tab, click on **Registration**.
- Select **Registration and Add/Drop Classes**.
- After selecting the appropriate term, the student is presented with the SEA.

For more information, please view a [copy of the SEA](#) or see our [FAQs](#).

### 3.5.3. Standard of Academic Progress (SAP)

In order to be eligible for federal and/or state financial aid, a student must meet all federal Satisfactory Academic Progress (SAP) requirements. All students must continuously meet the following four criteria in order to maintain SAP for financial aid eligibility.

- **Qualitative Measure (Grade Point Average)**
- **Quantitative Measure (Annual Credits)**
- **Maximum Time Frame Measure (Total Allowable Credits)**
- **Pace**

For complete information, students may refer to the SAP standard website at [www.nova.edu/financialaid/eligibility/sap-standards.html](http://www.nova.edu/financialaid/eligibility/sap-standards.html).

### 3.5.4. Withdrawal and Refunds

Master's students may withdraw from a course under specific timing criteria and receive a partial refund. A request for tuition refund must be made in writing at the time of withdrawal. Refunds will be made solely at the option of the university and will be based on the legitimacy of the reason for withdrawal. If granted, refunds are adjusted as follows:

For Fall/Winter Term I and Semester Classes

Drop during 1 <sup>st</sup> week of term	100% refund
Drop during 2 <sup>nd</sup> week of term	75% refund
Drop during 3 <sup>rd</sup> week of term	50% refund
Drop during 4 <sup>th</sup> week of term	25% refund
After fourth week of classes	No Refund

For Fall/Winter Term II Classes

Drop during 1 <sup>st</sup> week of term	100% refund
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Drop during 2 <sup>nd</sup> week of term	75% refund
Drop during 3 <sup>rd</sup> week of term	50% refund
Drop during 4 <sup>th</sup> week of term	25% refund
After fourth week of classes	No Refund
For Summer Term I and Semester Classes	
Drop during 1 <sup>st</sup> week of term	100% refund
Drop during 2 <sup>nd</sup> week of term	75% refund
Drop during 3 <sup>rd</sup> week of term	50% refund
After third week of classes	No Refund
For Summer Term II Classes	
Drop during 1 <sup>st</sup> week of term	100% refund
Drop during 2 <sup>nd</sup> week of term	75% refund
Drop during 3 <sup>rd</sup> week of term	50% refund
After third week of classes	No Refund

Refunds are not granted to Ph.D. students upon withdrawal. For specific drop/add dates, please see the [graduate academic calendar](#).

### 3.5.5. Leaves of Absence

A leave of absence may be granted in all OC programs. Details of the NSU policy are located at [www.nova.edu/studentaffairs/forms/studenthbk\\_2016-17.pdf](http://www.nova.edu/studentaffairs/forms/studenthbk_2016-17.pdf). However, it is clearly understood that during a leave no NSU resources are to be used. The student is neither working on a research or review project nor is in communication with their advisor on academic subjects.

A leave of absence for one or more terms may be granted under special circumstances if a student must interrupt thesis research or capstone review studies. The leave request must be submitted in writing and approved in writing. It is granted at the discretion of the Department Chair. Reentry into the master's program after a leave of absence should be requested in writing and is not guaranteed.

**Note:** Unregistered students lose their online library privileges, including database searches and interlibrary loan. Students not registered for 6 months will automatically lose their email account. A leave of absence can impact student loan disbursement and repayment. See [www.nova.edu/financialaid/](http://www.nova.edu/financialaid/).

#### 3.5.5.1. M.S. Programs

Students do not have to register for course work sequentially in each subsequent term. If a student anticipates a hiatus of one term or longer between registrations for course work, the program office should be notified. Note, however, that once a student has formally registered for credits towards their capstone or thesis, continuous registration each term is required. **Failure to register for capstone or thesis credits during a given term without an approved leave of absence is not permitted and may signal a student's withdrawal from the degree program.**

#### 3.5.5.2. Ph.D. Program

Students are expected to register for course or thesis work sequentially in each subsequent term. A leave of absence for one or more terms may be granted under special circumstances if a student must interrupt dissertation research. The leave request must be submitted in writing and approved in writing. It is granted at the discretion of the Department Chair. Re-entry into the Ph.D. program after a leave of absence should be requested in writing and is not guaranteed.

### **3.6. Academic Activities and Approvals**

#### **3.6.1. Advising**

There are 3 levels of advising at the Halmos College of Natural Sciences and Oceanography (HCNSO)

- Program Advising from the Program Office
- Interim Advising by assigned faculty
- Mentorship Advising (for Capstone/Thesis) by selected faculty

#### **Program Advising:**

- Program Advising (PA) will include program requirements, scheduling guidelines and milestones, and any problems, issues, or concerns.
- PA follows the mandatory orientation program for new students prior to the start of their first term.
- Each student will meet formally with the academic advisor for a first academic advising appointment as a new student.
- Initial Program Advising will occur during the student's first term. **Each new student must participate in initial Program Advising before they are permitted to register for the second term of classes.**
- The Program Office will be available for subsequent Program Advising as needed. To schedule an advising appointment, please contact the current academic advisor and submit a request [here](#).

#### **Interim Advising:**

- Interim Advising is an important part of the advising mix. It is designed to be of utility for the students and to promote program engagement and success during their graduate study experience prior to obtaining a capstone or thesis advisor.
- Each entering M.S. student will be assigned to a faculty member as their "Interim Advisor" (IA).
- The IA faculty member will hold one group meeting with his/her advisees during each semester (Fall, Winter, Summer). These are simple, cordial meetings aimed at getting to know the students and to provide a better sense of belonging for the student during the beginning of their graduate experience.
- IA group meetings continue until the student acquires a Capstone or Thesis advisor. (Note: the IA faculty does not need to be the Capstone or Thesis advisor.)

#### **Mentorship Advising:**

- Mentorship Advising (M.A.) begins after the student and a faculty member have together selected a Capstone or Thesis topic. That faculty member will become the M.A. until the student completes the program

- The M.A. will advise the student relative to his or her research and the writing of the Capstone or Thesis and provide discipline relevant career advice.

### **3.6.2. Orientation**

A mandatory orientation session is held every fall for incoming in-house students and may be held at other times for groups of incoming students to inform them about the facilities and M.S. program requirements. It is recommended that students not starting in the fall meet with the Assistant Director of Graduate Admissions during their first term. If a student cannot attend the orientation in person, they will be required to view the orientation information posted on NSU's Blackboard. The program office must be alerted if a student cannot attend the orientation in person.

### **3.6.3. Disabilities**

If a student has a documented disability, they should contact [The Office of Student Disability Services](#) on the Ft. Lauderdale/Davie campus. It is the student's responsibility to initiate the process for disability services. The mission of Student Disability Services is to provide accommodations, support services, and auxiliary aids to qualified students with disabilities to ensure equal and comprehensive access to University programs, services, and campus facilities. Once the student has established eligibility with Student Disability Services, they should also notify the Program Office at the HCNSO to ensure that this information is kept with their file. This information must be on file with the program office and Student Disability Services before requesting consideration in any course.

For more information, please call 954-262-7189 or visit the Student Disability Services website at: [www.nova.edu/disabilityservices](http://www.nova.edu/disabilityservices).

### **3.6.4. Veteran Benefits**

Department of Veterans Affairs (DVA) educational benefits are designated to provide eligible individuals with an opportunity for educational and career growth. It is certainly one of the most valuable benefits afforded to veterans and qualified dependents and should be wisely utilized.

Veterans have earned the right to use their educational benefits for the purpose it was intended.

Veterans may contact NSU's VA certifying official at [www.nova.edu/financialaid/veterans](http://www.nova.edu/financialaid/veterans) or at VA Certifying Official

800-541-6682, ext. 27236

Fax (954) 262-3966

E-mail: [VAbenefits@nova.edu](mailto:VAbenefits@nova.edu)

Office Hours: Monday - Friday, 8:30 am - 5:00 pm EST

The Department of Veterans Affairs (DVA) has assigned NSU to the Atlanta Regional Processing Office.

Department of Veterans Affairs (DVA)

Atlanta Regional Processing Office  
P.O. Box 100022  
Decatur, GA, 30031-7022.  
888-GI-Bill-1

### **3.7. Programs of Study**

Descriptions for all courses are located at:

[M.S. Biological Sciences](#)

[M.S. Marine Science](#)

Since the “normal” electives for each major may not exactly suit an individual student’s career goals, interests, or research needs, some program flexibility may be provided in the form of elective courses from a specialty other than the one in which the student is enrolled. Permission for program flexibility must be given in writing by program administrators. Such course flexibility is limited to one course. It is stressed that any deviation from the normal program must be done carefully and with approval of a program administrator and the major professor (if one has been selected). The applicability of the elective course must be justified and approved prior to registration. Failure to do this risks non-approval of the course for program credit after the fact. This can delay a student’s progress.

Specific suggestions for the timeline of activities for a capstone or thesis proposal are located here:

[Capstone](#)

[Thesis](#)

#### **3.7.1 M.S. Capstone/Thesis Tracks**

There are two options for completing an M.S. degree: a capstone track and a thesis track.

**All entering students are automatically accepted in the capstone track option.** This is because thesis is typically a longer duration track. About half of graduating students each year are capstone students.

To successfully complete the capstone track, students nearing completion of required coursework must submit and defend a capstone. Prior to completion of either capstone or thesis, a proposal must be passed by the reading committee. A capstone is a scientific manuscript, based upon a comprehensive literature search, review, and synthesis of the chosen topic. It is similar to a thesis, inasmuch as data need to be acquired and analyzed within the framework of a scholarly article with the exception that these data can be acquired from the literature. In certain cases, a study subject may not lend itself to quantification. In such a case, the argument for the chosen approach in the proposal must be as clear and convincing as any quantitative argument. Carrying out a capstone is possible with agreement from a major professor, typically, capstone students find a major professor on their own by approaching faculty in the student’s area of interest. Students will be assigned a capstone advisor if they have difficulty finding one. Prior to beginning a capstone and registering for capstone credits, the student must write a proposal which must be approved by the student’s major professor, committee, and the Department Chair, and be submitted to the Departmental Administrator in the Program Office.

Some students complete the thesis track. A thesis is an original contribution to knowledge resulting from the systematic study of a significant problem or issue. It requires the student to secure agreement from a faculty member, with adequate funding to carry out the proposed research, to be the student's major professor. Students are not guaranteed a thesis advisor in the same way as they are guaranteed a capstone advisor. Prior to beginning thesis research and registering for thesis credits, the student must write a proposal which must be approved by the student's major professor, committee, and the Department Chair, and be submitted to the Departmental Administrator in the Program Office.

### **3.7.2. Committee Composition**

Each M.S. student will have an advisory committee. To obtain the maximum benefit, it is to the student's advantage to form this committee early in his or her program.

**Capstone:** The capstone committee will consist of at least two members, one of which must be a faculty member of the Halmos College Natural Sciences and Oceanography. The major professor and at least one other committee member must have the terminal degree in a field relevant to the capstone topic. Other members of the committee must ordinarily have the terminal degree.

For more information about the capstone and proposal process, students may refer to the directions for the [capstone track](#) student

**Thesis:** The thesis advisory committee will consist of a major professor from the HCNSO faculty and at least two additional members, one of whom must be from another college of Nova Southeastern University or from outside the university. In rare cases, requiring approval by the Department Chair, the major professor may be an adjunct faculty member. The committee participates in topic selection and preparation of the proposal/outline and thesis. Close coordination between student and committee during this process is strongly advised. The major professor must have the terminal degree in a field relevant to the thesis research. Other members of the committee must ordinarily have the terminal degree.

For more information about the thesis and proposal process, students may refer to the directions for the [thesis track](#) student.

#### **3.7.2.1. Proposals**

Before a thesis or capstone can be accepted, a proposal must be submitted to the chosen committee. The major professor and committee member(s) will review the proposal draft. The student may meet and discuss issues with the professor and committee. The committee members make a final decision as to whether the proposal is defensible. If the proposal is approved, the student can submit their proposal online through NSUWorks [CNSO Proposal Review](#). From there, the student's committee members must log in and approve of the student's proposal. After receiving approval from all committee members in NSUWorks, the program chair will review the proposal for approval. When the chair approves of the proposal, an email will automatically be generated alerting the student that their proposal has been accepted by the program office.

The proposal is a demonstration by the student and the involved faculty that the student is indeed ready to produce a capstone/thesis that will allow graduation according to the standards of NSU Halmos College of Natural Sciences and Oceanography (HCNSO). This forms the basis of an understanding that the faculty involved (including the department chair, who has final signing authority) will allow graduation if the student produces a document with agreed-upon quality and content. To avoid unpleasant surprises and undue delays to a student's graduation, a proposal is only acceptable once it demonstrates, in all matters, that the student will indeed be able to produce the thesis/capstone and meet the high quality criteria required by the department. Fairness to student and committee as well as maintenance of academic integrity are the utmost concern here. A proposal will not be accepted if the style, presentation, and content are not to the quality as would be accepted in the capstone/thesis. This because it may give the student a wrong impression of what is acceptable as a capstone/thesis – leading ultimately to unnecessary delays at submission stage. Therefore, the proposal should be seen as a “mini-capstone/thesis” that is at the same stage the blue-print for the work that will be done in the capstone/thesis.

The program chair must approve the proposal at least two weeks prior to the start of each term. Proposal approval to begin research credits in the Winter semester are urged to submit their proposal before Winter closure to ensure timely review of their submitted work.

### **3.7.2.2. Report of Progress**

The report of progress is required from each student registered for thesis, capstone, DIS, or dissertation credits by the end of each term of registration before a grade is issued. The completed report is turned into the Program Office by the student's advisor. **Not submitting the Report of Progress prior to the end of term will result in failing the thesis, capstone, or Directed Independent Study (DIS) credits for that term.**

The form is available online at <http://cnso.nova.edu/forms/report-of-progress.pdf>.

*The report will include the following information:*

- Student's name and date
- A brief narrative synopsis of the work completed since the last report (for example, details of experiments conducted and literature reviewed)
- Target date for thesis or capstone completion
- Estimate of time spent on thesis or capstone work this term
- A list of problems experienced (if any)
- Major Professor's comments
- Major Professor's signature

### **3.7.2.3. Capstone**

A capstone is a scholarly manuscript, based upon a comprehensive literature search, review, and synthesis of the chosen topic. It is similar to a thesis, inasmuch as data need to be acquired and analyzed within the framework of a scholarly article with the exception that these data can be acquired from the literature. A comprehensive literature search is expected and students are encouraged (where appropriate) to talk with workers actively engaged in research relevant to the topic. In this way, students

can obtain current information for inclusion for their capstone and also demonstrate their ability to explore datasets. The capstone is bound like a thesis using the Oceanographic Campus Library approved cover (see librarian) and should be presented in good word processed laser-printed quality. One hard-bound copy is required for the library; the other copies will be kept electronically. The capstone should contain at minimum:

- Title page
- Table of Contents (detailed outline, using outline headings in text, same format)
  1. Introduction
  2. Statement of Purpose or Objectives
  3. Methods
  4. Results or Review
  5. Summary and Conclusions
  6. References

Before starting a capstone, students should read some of the completed capstone projects in the Oceanographic Campus Library. After choosing a topic, students must check that the subject area is novel and has not been dealt with by a previous capstone. A list of all capstones completed is available in the graduate student office. There are no set guidelines on length, but most capstones are around 50 pages in length (excluding tables and figures).

Please see Capstone Binding requirements at: [Oceanographic Campus Library Guide to Capstone Binding](#).

#### **3.7.2.4. Thesis**

A thesis is an original contribution to knowledge resulting from the systematic study of a significant problem or issue. The following is an outline of the various sections of a traditional, quantitative thesis. The format is presented only as a guide. For more in depth information, consult the applicable major professor. The thesis should contain the following sections:

- Title page (see end of handbook for standard form)
- Approval page (see end of handbook)
- Abstract
- Acknowledgments
- Preface (optional)
- Table of Contents - (detailed; this serves as the outline and section headers as well)
- Body of Thesis
  1. Introduction
  2. Statement of Purpose or Objectives
  3. Methods and Materials
  4. Results
  5. Discussion
  6. Summary and Conclusions
  7. References
  8. Appendices (optional)

Once the thesis proposals have been approved, M.S. thesis students sequentially register for and complete a minimum of nine thesis research credits in each succeeding term until the thesis is complete and has been successfully defended. Sequential registration continues until the thesis is finished. If a

student fails to register for any given term without written approval by the Chair, missed credits must be made up before graduation, usually during the next term of registration. It should be noted that while a minimum of nine thesis research credits is required; more than this is usually necessary for the completion of M.S. research.

Please see Thesis Binding requirements at: [Oceanographic Campus Library Guide to Thesis Binding](#).

### **3.7.2.5. Rough Drafts - Committee Inspection of Capstones and Thesis**

Rough draft copies of a capstone or thesis submitted to committee members prior to the defense must be complete, containing embedded figures and tables with legends and a bibliography. The draft copy must be double-spaced and should be in good form. It must not be missing parts essential to a proper evaluation, especially the data.

Students should expect demands for major revisions by the committee (editorial or otherwise), especially in the first drafts. Several drafts are usually necessary before the final form is achieved. The entire process from first draft to a final defensible copy can be very time consuming. To avoid unnecessary delays, students are advised to work out a timeline with their advisors and committee members and adhere to it. Students must bear in mind that staff and faculty members have a host of responsibilities. Without prior coordination, an unanticipated draft may languish on a committee member's desk for weeks or even months (for example, if a committee member is in the field).

### **3.7.2.6. Defense of Capstone and Thesis**

On completion of the capstone or thesis to the major professor's satisfaction, it is formally submitted to the other committee members. Upon agreement of the full committee, submission of the paper to the program office, and approval of the Department Chair, the defense may be scheduled. The 90% complete capstone or thesis can be submitted to NSUWorks [CNSO Defense Approval](#) at least three weeks prior to the end of the term. Once the student submits their paper, the committee members must go in to NSUWorks and approve their defense. After all committee members approve, the chair will review the capstone or thesis for final approval for defense. The student will receive an automatically generated email once their defense is approved which will allow them to contact the program office to schedule a date and time for their defense.

The defensible copy must be complete, including, for example, all relevant materials, appendices, figures, and data tables. The copy (or reproductions thereof) will be available for review to any interested faculty member. Incomplete works will not be acceptable for defense. Once the defensible copy is submitted, additional revisions should not be made or circulated prior to the defense.

All M.S. thesis and capstone defenses must be scheduled at least two weeks in advance. Thus, although they may be scheduled later, a defense for a capstone or thesis may be scheduled no sooner than one week after submission to the program office. For very long works, this time period may be extended to provide interested faculty adequate time for reading.



There are two components to a defense: public and private. For the public defense, requirements generally include a 30- to 50-minute oral presentation (with appropriate visual aids) to the faculty, student body, and other interested persons. In the case of online students who are unable to attend their defense in person at the Halmos College of Natural Sciences and Oceanography, alternate arrangements may be made using audio-visual software. The committee then will question the candidate in private on aspects related to their capstone or thesis work. This private session is closed and limited to the candidate, members of the committee, and interested faculty members. The committee then takes a vote in closed session. The capstone or thesis may be accepted, accepted with revision, or rejected.

The Department of Marine and Environmental Sciences and Department of Biological Sciences faculty ultimately must pass on thesis acceptability. The student should consult frequently with the committee during all phases of thesis work for continuity and in order to avoid problems during the formal defense. If the paper is not acceptable, the student receives the grade of "F" for the thesis or capstone credits. If the paper and defense are acceptable, the student receives a grade of "P". If the paper is acceptable, but requires only minor corrections, the student may receive a grade of "P" when the corrected paper is received. The student will be informed of the committee's decision following the closed defense. If extensive corrections are required the student may have to register for additional thesis or capstone credits.

### **3.7.3. Ph.D. Program**

#### **3.7.3.1. General and Credit-Hour Requirements**

There are two informal divisions within the Ph.D. in Oceanography Program: marine biology and physical oceanography. The Ph.D. degree requires a minimum of 90 credits beyond the baccalaureate. Ph.D. students must take one graded course (not pass/fail) during their first semester. At least 42 credits must consist of upper-level course work. At least 24 credits must consist of dissertation research. The student may not register for research credits (DIS) until after successfully defending the research proposal. After faculty acceptance of the research proposal the student must register for a minimum 3 research credits per term until completion of the degree. The student is limited to a total of 9 credits of coursework per term. In rare circumstances the student may register to take more than 9 credits/term but this requires written permission from the Department Chair.

Ph.D. students pay full tuition while in active status; that is, while taking courses, finalizing the proposal, performing research, and writing the dissertation. The minimum activity requirement is three years, but the typical activity requirement for a student with an in-field master's degree is more than three years. The minimum time limit (three years) begins with the initial course registration. Once Ph.D. activity has begun, registration is sequential each term. Full tuition must be paid each term. Failure to register for a particular term is not permitted without prior written approval by the Director and may signal the student's resignation from the degree program. Forms and cover sheets are provided at <http://cnso.nova.edu/tools-resources/student-forms.html>.

#### **3.7.3.2. Academic Activities and Approvals**

Ph.D. students may transfer up to 30 graduate course credits from prior graduate programs in the same discipline as their anticipated Ph.D. Transfer courses must be either reasonable duplicates of courses offered at NSU or clearly in an applicable Ph.D. field of interest. Transfer acceptability will be decided by

the Department Chair, the student's advisors, and the student's dissertation committee (if formed at entrance).

### **3.7.3.3. Committee**

The student's Ph.D. Committee consists, at a *minimum*, of four people, at least three of whom must be Halmos College of Natural Sciences and Oceanography (HCNSO) faculty and one of who must be from outside the HCNSO. The committee monitors all phases of the candidate's progress. The committee is formed prior to acceptance or within two terms of admission.

### **3.7.3.4. Proposal Defense**

Before research relevant to the Ph.D. can begin, a student must produce a detailed research proposal written under guidance of the major professor and members of the supervising committee. The dissertation proposal should consist of at least the following elements:

- title of the proposed dissertation
- statement of the problem and hypothesis to be tested
- statement of the significance of the work
- detailed description of the methodology with enough detail that the methodology can be understood without having to consult secondary sources
  1. literature should be cited where applicable
  2. proper experimental design is very important and will be subject to review and comment by the dissertation committee
- expected results of the research should be provided, and any required funding, facilities, and other equipment/resources should be listed
- references/bibliography

A candidate will defend the proposal in an oral presentation to faculty. A written version must be submitted at least one week beforehand and reside in the program office for inspection by the faculty if desired. At the oral presentation defense, a candidate will be expected to demonstrate sufficient knowledge about the proposed research project, and to justify the chosen research topic. Presentation will be open only to NSU faculty and OC students; a closed session with the student will follow, restricted to the committee and interested faculty. If areas of deficiency are highlighted, a candidate will be notified and will have the opportunity to modify the proposal. The committee may require a second presentation.

### **3.7.3.5. Qualifying Examination**

Within 6 months to a year after admission, the student will complete a qualifying exam before his/her committee that will determine basic knowledge and deficits to be corrected by coursework. This test is used to tailor the student's curriculum. It is not graded, and does not determine candidacy. The qualifying examination may be taken directly after the proposal defense.

### **3.7.3.6. Comprehensive Examination**

The examination consists of written and oral phases. The written exams, taken on completion of formal course work, are administered by the major professor and consist of questions submitted by each committee member. The candidate is allowed a day to answer each member's questions. The entire exam takes at least four days. The student is informed of the results of the written examination within one week of completion. At that time, the committee determines if the answers to the written portion warrant further examination, in which case an oral exam is scheduled. The student normally takes the oral examination within two weeks of this notification. The oral phase consists of questions concerning any aspect of marine science posed by each committee member during a joint meeting but typically concentrates on areas highlighted by weak responses on the written exam. After the examination, the student will be excused and the committee will determine the outcome. The decision of the committee must be unanimous. A student failing either written or oral parts may retake the exam once, typically two to six months after the first attempt.

### **3.7.3.7. Defense of Dissertation**

On completion of the dissertation to the major professor's satisfaction, it is formally submitted to the other committee members. The dissertation may be scheduled for defense only after approval by the entire committee and the Department Chair.

All Ph.D. dissertation defenses must be scheduled at least two weeks in advance through the program office. Notice will be provided to the faculty. At least two weeks prior to a student's scheduled defense, a copy of the work must be submitted to, and reside in, the program office. For very long works, this time period may be extended to provide the committee adequate time for reading. The defendable copy must be essentially complete, including, for example, all relevant materials, appendices, figures, and data tables. The copy (or reproductions thereof) will be available for review to any interested faculty member. Incomplete works will not be acceptable for defense.

The defense will consist of a 40- to 50-minute oral presentation (with slides/visual aids) to the faculty, student body, and other interested persons. The committee will then question the candidate on the dissertation work and related aspects. This session is closed and limited to the candidate, members of the committee, and interested faculty members. The committee then takes a vote in closed session. The thesis may be accepted, accepted with revision, or rejected. The Halmos College of Natural Sciences and Oceanography (HCNSO) faculty ultimately must pass on acceptability of the dissertation. The student should consult frequently with the committee during all phases of thesis work for continuity and in order to avoid problems during the formal defense.

### **3.7.3.8. Final Submission of Dissertation**

One signed copy of the successfully defended dissertation, including any revisions specified during the defense, must be submitted in bound form to the Halmos College of Natural Sciences and Oceanography librarian (HCNSO). The complete dissertation may be submitted to the librarian for binding or the student may elect to have this done elsewhere. The cost of binding is the student's responsibility.

The major professor is responsible for insuring that changes specified by the committee are incorporated in the final version. One bound copy is for the program office. A digital version of the work can be found

online at [www.nsuworks.nova.edu](http://www.nsuworks.nova.edu). The student may submit any number of additional personal copies for binding.

### **3.7.3.9. Report of Progress**

This report is required from each student registered for dissertation credits by the end of each term of registration. The completed report is turned into the Program Office by the student's advisor. The form is available online at: <http://cnso.nova.edu/forms/report-of-progress.pdf>

The report will include the following information:

- student's name and date
- a brief narrative synopsis of work completed since the last report -- for example, details of experiments conducted and literature reviewed.
- target date for dissertation completion
- estimate of time spent on dissertation work this term
- a list of problems experienced (if any)
- major professor's comments
- major professor's signature

**Not submitting the Report of Progress prior to the end of term will result in failing the credits for that term.**

## **3.8. Online Education**

The Halmos College of Natural Sciences and Oceanography (HCNSO) offers a variety of courses in an online learning format at a graduate (M.S.) level. Other M.S. courses are offered in house.

### **3.8.1. Course Delivery**

Online courses are offered directly from the web by means of the Blackboard course software delivery program (found at <https://sharklink.nova.edu>). Students must be fully admitted, registered within a course, and have an active NSU email account before they can access their Blackboard materials.

Admitted students are encouraged to explore the information and links at: [www.nova.edu/ocean/tools-resources/students.html](http://www.nova.edu/ocean/tools-resources/students.html).

To ensure effective communication, it is particularly important that students update WebSTAR (<http://webstar.nova.edu/>) with any changes in contact details (e.g. address, telephone), and use their NSU email address for all formal email communication.

### **3.8.2. Textbooks**

Any texts required for online learning courses may usually be ordered and shipped from the NSU bookstore, which can be accessed directly from the web at [www.nsubooks.bncollege.com](http://www.nsubooks.bncollege.com).

### **3.8.3. Technological HELP Desk**

The Office for Information Technologies at NSU maintains a computing help desk that may be contacted for assistance with any academic computing problems. They can be contacted online at:

[www.nova.edu/help](http://www.nova.edu/help) or by phone at (954) 262-HELP (4357) or toll free: (800) 541-NOVA (6682) x24357.

### **3.8.4. Attendance**

As a requirement for accreditation, regular attendance is necessary. Each professor has the responsibility to enforce class attendance. To fulfill this requirement, students must have logged-in, accessed, and/or interacted with the majority of online course requirements (e.g. assignment submissions, asynchronous discussion) by the first week of the session or they may be withdrawn from the course by the instructor through the Program Office. For this reason, if students anticipate or encounter any reason why they may be unable to engage with their online coursework for an extended period during a term, they must communicate this to their instructor and the Program Office as soon as possible. Students do have the option of requesting an Incomplete; if this is granted by their instructor, they then have 3-months from the end of the term date to submit the required course work as decided with the instructor. An incomplete grade agreement form must be completed and filed with the graduate program office. An instructor reserves the right to request original written documentation to substantiate any such absences. A falsified excuse is cause for disciplinary action. An Incomplete course graded I must be completed in one semester or the grade is changed to F. All students are referred to the [section 3.5.2](#) of this catalog for details on course withdrawals and refunds.

### **3.8.5. Final Examinations**

If a final examination is scheduled for an online course, students who reside within a 50-mile radius of the Halmos College of Natural Sciences and Oceanography (HCNSO) are required to come to the site to complete the exam. Students located near an NSU Regional Campus may request to take the exam there: <http://www.nova.edu/campuses/index.html>. Students who reside more than 50-miles from the HCNSO and do not wish to travel to the Oceanographic Campus (OC), have the option of using the online proctoring service, [ProctorU](#) (see section 3.8.6 Proctoring) at a low cost (~25\$, payable by the student directly to ProctorU). Further details on this can be provided by the program office.

### **3.8.6. Proctoring**

Many students chose online coursework for the convenience and NSU wants to ensure that testing is convenient as well. However, to ensure the integrity and security of the assessment process, proctoring is a firm requirement.

For fully online courses, there will be either one or two proctored tests required in each course (which will be announced in the course syllabus), most likely the midterm and the final exam (at the instructor's discretion).

Students can have exam(s) proctored in person or online, for free or for a fee:

- **In person, for free:**

- Students can make arrangements to have their exam proctored in person, at the NSU Oceanographic Campus' Foreman Building's computer lab, in Dania Beach, FL, under the supervision of one of the proctors:

- Students must sign up for a time for their exam to be proctored by going to the library website: <http://nova.campusguides.com/ocproctoring> and selecting the “Schedule your Exam” tab.

Students may find the exam proctoring policy at: <http://nova.campusguides.com/ocproctoring/policy>

• **Online, through ProctorU, for a fee:**

Students enrolled in online courses are required to have audio-video capabilities (webcam and microphone) in their computer. They can arrange for the convenience of an online proctor through ProctorU by visiting <http://www.proctoru.com/howitworks.php>, (they should watch the video and read through the instructions).

Please note:

- Students will need a web camera and microphone so the proctor can see and hear students during the test.
- Students will need a stable Internet connection. Students are encouraged to test out their equipment several days before the test date at <https://www.proctoru.com/testitout/>
- ProctorU charges students a flat fee per completed exam session, based on the set time limit of the exam:
  - 61-120 minutes: \$25.00 (exams should be 2 hrs max)
- Students will need to schedule their proctoring session at least 72 hours before the exam time, to avoid additional “premium scheduling option” fees listed below:
  - Take it Soon (Within 72 hours) \$5.00 (additional)
  - Take It Now (Within 1 hour) \$8.75 (additional)
- Please note that students who chose to schedule their appointment within the premium window (within 72-hours) will be charged a premium fee (and will be charged again each time an appointment is rescheduled within 72 hours of an exam session).
- ADA/special accommodations: ProctorU will not charge students for any extra time needed to complete their exam. The student must provide the instructor proof of ADA accommodations needed during the first week of the semester

### 3.9. Grading

#### 3.9.1. Grading System

The following system is used to grade academic performance:

GRADE	DESCRIPTION
A	Excellent
B	Satisfactory
C	Marginal Pass
D	Poor
F	Failure
W	Withdrawal: Given after the third class week or termination by the instructor for non-completion of the course by the student.
I	Incomplete: Given when most (80 percent), but not all, work has been completed.
AU	Audit
P	Pass

Professors may use + or – in grading. However, the grading scale ranges from A to D-, no A+ or F+ are awarded. A grade of incomplete (I) must be requested from the instructor, have the Associate Dean's approval, and be accompanied by a **completed contract specifying outstanding course requirements and completion dates**. Completion of the course graded incomplete must occur within one semester (or 3 months) of the end of the course and the incomplete be changed to a different grade. If the course is not completed in 3 months, or the student has not withdrawn and received a W, the incomplete will automatically be converted to a grade of F. Under unusual circumstances students may request a time-extension to complete the course. Such requests must be submitted to, and approved by, the Associate Dean of Academic Programs prior to the end of the 3-month time limit. **There are no exceptions to this rule. Securing the completed and signed incomplete contract forms is the responsibility of the student.**

Students are permitted to retake, at their expense, courses for which a grade of C or lower has been earned. Retaking a course is only permitted once. Retaking of courses does not remove from the student's official transcript the entry of the earlier registration nor the grades earned; however, only the highest grade earned in a course will be computed as part of the grade point average, thus enabling the student to improve his/her academic standing. Courses with a grade of C- or lower will not be counted as credits towards degree requirements. *Core classes with a C- or lower must be retaken to count towards degree conferment.*

### 3.9.2. Quality Points

Quality points are used to compute the overall Grade Point Average (GPA) of a student.

GRADE	QUALITY POINTS
A	4.00
A-	3.67
B+	3.33
B	3.00
B-	2.67
C+	2.33
C	2.00
C-	1.67
D+	1.33
D	1.00
D-	0.67
F	0.00

Note: In some courses, only whole letter grades are awarded.

### 3.9.3. Grading Policies

#### 3.9.3.1. Audit

Master's degree candidates and special students may audit courses (non-credit) for one-half the normal tuition rate (plus fees). These students may withdraw from audited courses and receive full or partial tuition reimbursement according to the Withdrawal and Refund Policy listed in the handbook and bulletin. Ph.D. candidates may register to audit courses at no additional charge beyond their regular tuition.

Audit students are expected to attend classes and participate in the courses as regular students. If this is not the case, the students will be administratively dropped from the class roster. Audit students may take course exams and complete term papers at their option. An audit does not count towards degree or certificate requirements.

### **3.9.3.2 Directed Independent Studies**

Students may take a maximum of one named directed independent study (DIS) to fulfill an elective requirement. These are called Special Topics in Marine Science.

### **3.9.3.3 Maximum Allowable Credits per Term**

None of the NSU HCNSO graduate programs are lock-step. Students may go at their own pace, selecting the courses and credit hours they wish to take each term to complete the requirements listed above within the required time frame for completion of the degree (see section 3.4). **Students may not take more than 9 credits per semester.** Students may request to take 12 credits in a semester, under special circumstances. Students are cautioned that any courses within a term can impact financial aid and student employment.

### **3.9.3.4. Attendance**

**As a requirement for accreditation, regular and punctual class attendance is necessary.** Each professor has the responsibility to enforce class attendance. To fulfill this requirement, students must be present for 80% of the regularly scheduled sessions and field trips or they will automatically be withdrawn from the course by the instructor through the Program Office. There are no excused absences for purposes of this rule.

### **3.9.4. Examinations**

Final written examinations are required in graduate courses, except in seminars and other tutorial courses where research papers or other requirements may replace a final exam. Usually the final examination or total accumulated points determine the grade for a course. However, the instructor may indicate otherwise.

A student failing to take the final examination in any course must notify the program office as soon as circumstances permit, preferably prior to the final. If the Program Chair is satisfied that the absence was justified, permission may be given to take the course as an incomplete and the student falls under the incomplete rules ([see section 3.9.1](#)).



### 3.9.5. Student Grade Transmittal

No grades will be released to students without full payment of tuition and fees (or firm arrangements for their payment). *Grade reports are mailed to the student's permanent address and are not given over the telephone or verbally by the program office.* Students may access their grades in [WebStar](#).

### 3.9.6. Grade Appeal/Grievance Procedure

Students who have reason to believe that there has been an error in assigning a grade may formally protest and invoke the Grade Appeal Procedure. The grade appeal or other grievance procedure for students is itemized below and should be followed in all instances, making sure that each step is completed before going on to the next step. If resolution is reached at the end of any given step, it is not necessary to continue.

Step 1:	The professor should be contacted to discuss the grade disparity. The problem should be resolved at this level if at all possible.
Step 2:	The student must make an appeal in writing to the professor noting specific objection to the grade received or the problem encountered. The professor must respond in writing giving justification for the grade or action given. <b>Copies of both communications should be forwarded to the program administrator.</b> The program administrator may decide the matter, if that is agreeable to all parties.
Step 3:	An appeal committee will review both written and oral arguments in the case. The committee will consist of at least one administrative officer of the program, at least one faculty member who teaches in the program, and others as deemed necessary by the program administrator(s).
Step 4:	The student and professor will be informed of the committee's decision and, barring any written objections to the committee by either party within fourteen calendar days, the recommendations of the committee will be accepted.
Step 5:	If written objections are received within fourteen days, the matter will be referred to the Department Chair for review and resolution. This step does not apply if the Director served on the appeal committee. In the latter case, the matter will be referred to the Dean of the HCNSO.

#### **4.0. Academic Standing**

The academic progress of all students will be evaluated after each term, including the summer term.

**Students shall be deemed in good academic standing unless they have a cumulative GPA of less than 3.0.**

##### **4.0.1. Academic Probation/Dismissal**

Any student who fails to maintain a cumulative 3.0 GPA will be placed on academic probation for two terms. Students must raise their GPA to at least a 3.0 or above in two subsequent terms. Students will not be permitted to take a term off between terms of academic probation. If probation is not removed at the end of the two subsequent terms, the student will be released from the program. A student may petition for reinstatement after 12 months, explaining the reasons why their academic potential has changed and re-admission should be considered. Reinstatement is not guaranteed and is only possible if it is probable that the student can raise their cumulative GPA to 3.0 in two terms.

A minimum 3.0 cumulative GPA is required for graduation.

##### **4.0.2. Grade Report of Progress**

Each student will be provided course grades at the end of every term. Grades will also be placed in the student's official record, maintained by the school's registrar, to which the HCNSO Graduate Program Office has access. The student may access their unofficial transcript through [WebStar](#). This transcript shows current status of grades and earned semester hours for all courses completed and/or attempted.

##### **4.0.3. Report of Progress**

This [progress report](#) is required from each student registered for thesis, capstone, or dissertation credits by the end of each term of registration before a grade is issued. The completed report is turned into the Program Office by the student's advisor.

The report will include the following information:

- student's name and date
- a brief narrative synopsis of the work completed since the last report -- for example, details of experiments conducted and literature reviewed
- target date for thesis, capstone, or dissertation completion
- estimate of time spent on thesis or capstone work this term
- a list of problems experienced (if any)
- major professor's comments
- major professor's signature

## **5.0. Student Conduct**

All students are expected to comply with the legal and ethical standards of the institution. Academic dishonesty and/or nonacademic misconduct will result in disciplinary action.

The University and the Department of Marine and Environmental Sciences expects its students to manifest a commitment to academic integrity through rigid observance of standards for academic honesty. The academic honesty standards include:

1. **Original Work.** Assignments such as course preparations, exams, texts, projects, term papers, practicums, etc., must be the original work of the student.
  - Original work may include the thoughts and words of another author but if that is the case those ideas or words must be indicated in a manner consistent with a university-recognized form and style manual.
  - Work is not original that has been submitted previously by the author or by anyone else for academic credit.
  - Work is not original that has been copied or partially copied from any other source, including another student, unless such copying is acknowledged by the person submitting the work for the credit at the time the work is being submitted or unless copying, sharing, or joint author-ship is an express part of the assignment.
  - Exams and tests are original work when no unauthorized aid is given, received, or used prior to or during the course of the examination.
  
2. **Referencing the Works of Another Author.** All academic work submitted for credit or as partial fulfillment of course requirements must adhere to each center's specific accepted reference manuals and rules of documentation.
  - Standards of scholarship require that proper acknowledgment be given by the writer when the thoughts and words of another author are used.
  - At Nova Southeastern University, it is plagiarism to represent another person's work, words, or ideas as one's own without use of a center-recognized method of citation. Deviating from center standards (1) or (2) is considered plagiarism at Nova Southeastern University.
  
3. **Tendering of Information.** All academic work must be the original work of the student. Giving or allowing one's work to be copied, giving out exam questions or answers, or releasing or selling term papers is prohibited.
  
4. **Acts Prohibited.** Students should avoid any impropriety or the appearance thereof, in taking examinations or completing work in pursuance of their educational goals. Violations of academic responsibility include, but are not limited to:
  - plagiarism
  - any form of cheating
  - conspiracy to commit academic dishonesty
  - misrepresentation

- bribery in an attempt to gain an academic advantage
- forging or altering documents or credentials
- knowingly furnishing false information to the institution
- falsifying excuses for attendance
- The use of cell phones, or any other electronic devices not specifically allowed by an instructor, during an exam is not permitted. The use of such devices for any reason will be assumed to be for the purposes of cheating and will result in the student's dismissal from class and administrative action up to permanent expulsion from all HCNSO Graduate programs. If a student needs the phone for emergency notifications, or the like, leave the phone with the instructor at the start of class. The student will be immediately notified if there is an incoming call.

For clarification on plagiarism and copyright, students are referred to the online overview provided at: [www.nova.edu/library/dils/lessons/plagiarism](http://www.nova.edu/library/dils/lessons/plagiarism).

In cases of academic dishonesty occurring in the classroom, the faculty member has the option of discussing the incident with the student and deciding on the appropriate sanction (e.g. refusing to accept the paper, failing the course, etc.). A memo describing the offence and sanction is forwarded by the faculty member to the student and the Department Chair of the Department of Marine and Environmental Sciences. For a first offense, this is placed in the student's file at the Program Office. For subsequent offenses, further review and more serious disciplinary action may be warranted, including suspension or expulsion. However, any capstone or thesis, submitted for defense, exhibiting possible plagiarism as determined by the Associate Dean of Academic Programs will be returned to the student and his/her major advisor and committee members will be notified. If a majority of the student's committee members agree there was plagiarism, the student will be suspended from all HCNSO Graduate programs for 12 full months and the student must take or retake the in-house course on scientific communications prior to resubmitting the thesis or capstone for defense. The student may take the communications course during the suspension period. While taking the course, the student will be allowed on campus and have full use of NSU library and email resources. The student will pay full tuition to take the course and will have to wait until it is offered during the normal annual cycle of course offerings. Thus, it is possible the student will be delayed by more than a year to defend. If the resubmitted thesis or capstone contains possible plagiarism, the student's committee will be notified. If a majority of the committee agrees there was plagiarism, the student will be immediately expelled from the program with no chance for reenrollment.

Post-graduation, any dissertation, thesis or capstone found to possibly be a result of plagiarism will be submitted to a committee of not less than five HCNSO faculty members and two faculty members from other NSU colleges. The committee will recommend a course of action, up to and including revoking the Masters or Ph.D. degree, to the HCNSO Dean and the Vice-President of Academic Affairs.

The Department of Marine and Environmental Sciences is committed to maintaining a student, staff, and faculty culture where high ethical standards are the norm. Faculty members at the Department of Marine and Environmental Sciences have access to comprehensive web-based Turnitin.com plagiarism prevention software. Students registered in OC classes have the option of requesting access to [Turnitin.com](http://Turnitin.com) for evaluation of their research papers, prior to submission, as a learning tool.

The institution reserves the right to require a student to withdraw at any time for misconduct as described above. It also reserves the right to impose probation or suspension on a student whose conduct is determined to be unsatisfactory.

**STUDENTS WHO FEEL THEIR RIGHTS HAVE BEEN DENIED ARE ENTITLED TO DUE PROCESS.**

The NSU student handbook is located on the student affairs website at [www.nova.edu/studentaffairs/forms/studenthbk\\_2016-17.pdf](http://www.nova.edu/studentaffairs/forms/studenthbk_2016-17.pdf).

**6.0. Addendum**

*Master's Degree of Biological Sciences Program: Health Studies Concentration*

**Purpose of this Addendum**

The purpose of this addendum is to provide additional information and/or to represent approved revisions or changes to programs and courses as well as changes in policies and degree requirements that occurred after publication of the 2017-2018 Graduate Program Catalog on July 30, 2017. All changes and additions listed here take precedence over the information contained in the 2017-2018 Halmos College of Natural Sciences and Oceanography Graduate Program Catalog. All information contained in this addendum is subject to change without notice.

**Details of Changes**

**Addendum A**

Effective revision date: 05/01/2018.

This is a new addition to the Master's Degree of Biological Sciences Program: Health Studies Concentration.

**Admissions Requirements**

Entry into this program is only in the summer term. The application deadline for Summer 2018 is April 30, 2018. The following items are required for the application:

- Bachelor's degree from a regionally accredited college or university with a major in biology or a closely related field.
- Minimum GPAs: Cumulative 3.0 is required for undergraduate degree, with no science grades less than a C 3.0.
- NSU application (including statement of career goals)
- \$ 50 application fee (required)
- Three letters of recommendation - 3 from science professors
- All final official transcripts certifying coursework at the undergraduate level (required). Graduate transcripts not required for application.
- There is no competitive test score (e.g. GRE) required.
- If applicable: official course- by- course evaluation of foreign school coursework from a NACES approved evaluation service

- If applicable: official Test of English as a foreign language (TOEFL) internet-based score of 80 or above if international applicant. Exception if applicant is a citizen of a country in which English is the official language or applicants has obtained a bachelor, master, or doctoral degree from a regionally accredited institution in the United States.

### **Academic Programs**

This is a 12 month, 30-credit program of study, which begins with the Summer semester and includes the Fall and Winter semesters. To successfully complete this concentration, the student must pass all courses as well as a comprehensive exam at the end of the Winter semester. There will be two opportunities to take the exam before graduation.

A standardized Test Prep course will be available during the summer for students wishing to avail themselves of this before taking their standardized examinations. The course will be given at a discounted rate to students registered for the Summer and Fall semesters.

Shadowing opportunities at sites in the tri-county area will be a part of the Field Rotations course given in the summer. Each student will be assigned a faculty mentor upon registration.

### **Health Studies Concentration Learning Outcomes**

- Demonstrate an in-depth knowledge of science as it relates to the normal and abnormal processes of the human body.
- Demonstrate knowledge of current advances in medical research and the relationship to clinical practice.
- Demonstrate ability in problem solving and analytical thinking.
- Demonstrate both effective oral and written skills necessary to a professional setting.

### **Masters in Biological Sciences with a Concentration in Health Studies Major Requirements**

#### **CURRICULUM**

#### **SUMMER (5 credits)**

BCOR 5000 Graduate Seminar (3 credits)

BMHS 5100 Field Rotations (2 credits)

#### **FALL (13 credits)**

BMHS 5200 Pathophysiology (3 credits)

BMHS 5300 Pharmacodynamics (3 credits)

BMHS 5400 Advanced Regional Anatomy/Lab (4 credits)

BMHS 5500 Advanced Biochemistry (3 credits)

#### **WINTER (12 credits)**

BCOR 5585 Genomics (3 credits)

BCOR 5150 Immunobiology (3 credits)

BMHS 5250 Systems Neuroscience (3 credits)

BCOR 5350 Principles of Epidemiology (3 credits)

Comprehensive Exam (in the style of a standardized exam) – 2 attempts possible