

PH.D. IN MARINE BIOLOGY AND ECOLOGY

Overview

The Marine Biology and Ecology (MBE) graduate program focuses on a wide range of field, laboratory, and theoretical coursework in research areas such as coral reef studies, biological oceanography, and marine biology, fisheries biology, and the biology and behavior of marine animals. MBE Ph.D. students can choose from a diversity of research areas and coursework that provide a broad educational perspective.

Admission Requirements

Most successful applicants have a bachelor's degree in biological sciences including a strong foundation in physical sciences (chemistry, physics, calculus) and basic biological sciences. However, applicants with a diversity of other degrees also are successful. Courses in marine biology and oceanography are not necessary for entrance into the program. Applicants should contact specific faculty to discuss mutual research interests. The GRE score is not required for admission. Applicants whose first language is not English must pass the Test of English as a Foreign Language (TOEFL) with a score of at least 550. All application requirements are available here (<https://graduate.earth.miami.edu/admissions/application-information/>).

Curriculum Requirements

Each student will design a customized curriculum based on their research focus with advisor approval.

Code	Title	Credit Hours
The MBE Ph.D. degree requires 60 total credits. ¹		
MBE or Other Approved Electives ²		24
Dissertation Research		36
MBE 830	Doctoral Dissertation	
Additional Requirements		
RSM 700	Research Ethics	
Qualifying Examination ³		
MBE Seminar ⁴		
Educational Training Program (TA) ⁵		
RSM 771	Educational Training 1	
RSM 772	Educational Training 2	
RSM 773	Educational Training 3	
Total Credit Hours		60

¹ Minimum of 18 course credits and 12 dissertation credits.

² No core courses are required. Students choose courses with the advice of their committee.

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- At the end of the second year, a written qualifying examination is required of all Ph.D. students that focuses on the subject matter needed to complete the research proposed for the dissertation.
- The purpose of the qualifying examination is to demonstrate that the MBE doctoral student has the necessary understanding and expertise in research and related fields to complete the dissertation research. The topic areas should be agreed upon by the student, chair, and the dissertation committee soon after the proposal defense. The student is strongly encouraged to discuss the specific topics with each member of the dissertation committee, well in advance of the examination, to clarify the expected questions. The committee is encouraged to provide specific reading or areas of knowledge they will test the student on.
- The qualifying exam is 4 - 5 partial days (4 hours per day) on questions written by their committee. It is the advisor's responsibility to provide the test and to have the student's committee grade it in a timely manner. The scheduling of the exam sessions is the responsibility of the student's advisor, but in all cases the written portion of the examination shall be completed within one week.
- An additional oral qualifying examination may be required by the student's committee, but may not serve as a substitute for the written examination, which is a Graduate School requirement.
- The decision of passing or failing the qualifying examination rests with the dissertation committee. The qualifying examination (written and, if required, oral) must be successfully completed, as documented by the dissertation committee, before the student can be admitted to candidacy.
- In the event of a failure, a student may be re-examined once upon the recommendation of the student's committee in consultation with the academic committee. If permitted, the reexamination must be given before the end of the following semester.

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- Attendance to the MBE seminars is required every semester.
- All MBE students must give a talk in the series annually after the first year.
 - Students entering the MBE Ph.D. program with a Master's degree begin to give seminars in their first year.

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- Ph.D. students are expected to be a Teaching Assistant (TA) for two courses while pursuing their degree.
 - The mandatory TA program will include training of new TAs, evaluation of their performance, and recognition of excellence. The goal is to make the experience as valuable as possible for the TA, the faculty, and the students taking our courses.
 - A training session and two teaching opportunities are offered as courses in educational training (RSM 771, RSM 772, RSM 773). Students will be registered accordingly.
 - Specific requirements for TAs are outlined in the Rosenstiel School Student Handbook.

Sample Plan of Study

Year One		
Fall		Credit Hours
RSM 700	Research Ethics	0
Approved Elective		3
Approved Elective		3
Approved Elective		3
Credit Hours		9
Spring		
Approved Elective		3
Approved Elective		3
Approved Elective		3
Credit Hours		9
Summer		
MBE 830	Doctoral Dissertation	4
Credit Hours		4
Year Two		
Fall		
MBE 830	Doctoral Dissertation	1
Approved Elective		3
Credit Hours		4
Spring		
MBE 830	Doctoral Dissertation	1
Approved Elective		3
Credit Hours		4
Summer		
MBE 830	Doctoral Dissertation	4
Credit Hours		4
Year Three		
Fall		
MBE 830	Doctoral Dissertation	4
RSM 771	Educational Training 1	0
RSM 772	Educational Training 2	0
Credit Hours		4
Spring		
MBE 830	Doctoral Dissertation	4
RSM 773	Educational Training 3	0
Credit Hours		4
Summer		
MBE 830	Doctoral Dissertation	4
Credit Hours		4

Year Four			
Fall			
MBE 830	Doctoral Dissertation		4
Credit Hours			4
Spring			
MBE 830	Doctoral Dissertation		4
Credit Hours			4
Summer			
MBE 830	Doctoral Dissertation		4
Credit Hours			4
Year Five			
Fall			
MBE 830	Doctoral Dissertation		4
Credit Hours			4
Spring			
MBE 830	Doctoral Dissertation		4
Credit Hours			4
Summer			
MBE 830	Doctoral Dissertation		4
Credit Hours			4
Total Credit Hours			70

Mission

The mission of the Marine Biology and Ecology (MBE) Ph.D. program is to train the next generation of scientists in the fundamental skills, knowledge, and practice of biology of the oceanic environment. Through coursework and independent research, we strive to prepare our students for positions in academia, government, or industry in jobs that leverage their skills in critical thinking, current technical knowledge such as statistical analysis and modeling, and understanding of the global marine environment. Our program commits to inspire graduates to continued scholarship, service, and innovation in an environment that is inclusive and diverse.

Goals

The goal is for Ph.D. students to demonstrate mastery of the fundamental skills, knowledge, and practice of biology of the oceanic environment, and commitment to scholarship, service, and innovation in an environment that is inclusive and diverse.

Student Learning Outcomes

- Students will demonstrate a broad understanding of marine and atmospheric science and an awareness of how scientific research in their topical areas bears on current human and societal issues.
- Students will be able to critically evaluate scientific literature, review previous knowledge on a topic, formulate testable hypotheses, and skillfully use available data and tools to advance knowledge in a topical area. They will be able to conduct high-quality, doctoral research as evidenced by their dissertation research.
- Students will demonstrate advanced oral and written communication skills, and be able to effectively communicate scientific information to a peer audience.