M.P.S. IN TROPICAL MARINE ECOSYSTEM MANAGEMENT

Overview

The Master of Professional Science in Tropical Marine Ecosystem (https://mps.rsmas.miami.edu/degree-tracks/tropical-marine-ecosystem-management/) (TME), a track within the Department of Marine Biology and Ecology (https://marine-biology-ecology.rsmas.miami.edu/) at the Rosenstiel School of Marine and Atmospheric Science (RSMAS), provides students with advanced training in the theoretical aspects of tropical marine ecology, as well as the practical aspects needed to begin a career in this field. Please refer to the MPS website (https://mps.rsmas.miami.edu/degree-tracks/tropical-marine-ecosystem-management/) for more information about the TME track.

Admission Requirements

Prerequisites:

1. Bachelor of Science degree (B.S.) or Bachelor of Arts degree (B.A.)
2. One year of General Biology + General Biology Labs
3. One year of General Chemistry
4. At least one semester of Calculus
5. 9 additional credits in natural science (Research in these fields may, in some cases, substitute for coursework hours.)

Note to students: Deficiencies in required coursework may be considered on a case-by-case basis for otherwise highly qualified students or those demonstrating experience with these skills.

All application requirements are available here (https://mps.rsmas.miami.edu/prospective-students/admissions/).

Curriculum Requirements

Code	Title	Credit Hours
Ecology Requirement		
MBE 615	Tropical Marine Ecology	3
Statistics Requirement		
RSM 612	Statistics for Marine Scientists	3
or EVR 624	Statistics and Data Analysis for Environmental Science and Policy	
Policy Requirement		
EVR 620	Environmental Law and Policy	3
or EVR 720	Coastal Law and Policy	
or EVR 616	Ocean Policy	
or EVR 710	International Ocean Law and Governance	
or EVR 631	Marine and Coastal Protected Area Theory, Planning, Management, and Issues	
Field Requirement [1]		
MBE 621	Field Techniques and Instrumentation in Tropical Marine Ecology	3
or MBE 614	Tropical Marine Biology	
or MBE 637	Data Manipulation and Presentation for Marine Ecologists	
or MBE 644	Tropical Coastal Restoration	
or MBE 641	Reef Restoration Techniques	
Technical Skills Requirement [2]		
EVR 660 & EVR 661	Introduction to Marine Geographic Information Systems and Introduction to Marine Geographic Information Systems - Laboratory	3
EVR 610	Environmental Planning and the Environmental Impact Statement	3
Other Requirements		
RSM 600	Introduction to Research Diving Techniques [3]	3
RSM 667	Motorboat Operator Certification Course [3]	1-2
or RSM 664	Scientific Small Boating	
MBE 746	Marine Population Biology: Processes and Modeling *	3
or MBE 638	Tropical Microbial Ecology	
or EVR 629	Biology, Ecology, and Management of Mangrove Ecosystems	

or MBE 623	Marine Parasite Ecology	
or MBE 618	Reef Coral Biology, Ecology, and Conservation	
or RSM 601	Scientific Freediving	
or EVR 634	Shark Behavioral Ecology and Conservation	
Internship Requirement		
MBE 805	MPS Internship [4]	4-5
Total Credit Hours		**30**

* Courses listed are suggestions. Students may choose other electives with the approval of their academic advisor and/or course instructor if special permission is required.

1 Students may choose another field course in MBE or EVR with the approval of their academic advisor.

2 Students may take both courses if desired.

3 Enrollment is strongly encouraged. May be substituted for another elective with the approval of their academic advisor.

4 Enrollment in 2 - 6 internship credits required during a student's time in MPS. Completion of less than 2 internship credits must be approved by MPS Director. Typically 2 semesters are needed to complete all aspects of the internship phase of MPS.

Additional Elective Options

Students may take any elective on the RSMAS campus with the consent of their faculty advisor. Below are a few examples of courses past students in this program used as electives.

Code	Title	Credit Hours
MBE 614	Tropical Marine Biology	3
MBE 678	Evolutionary Genetics	3
MBE 643	Ecology, Conservation, and Ecotourism in the Galapagos II - Field	1
MBE 704	Biological Oceanography	3
MBE 716	Bayesian Statistics for Marine Scientists	3
EVR 601	Political Ecology of Marine Management	3
EVR 602	Economics of Natural Resources	3
EVR 604	Fieldwork in Coastal Management: Tourism, Conservation, and Development	3
EVR 620	Environmental Law and Policy	3
EVR 610	Environmental Planning and the Environmental Impact Statement	3
EVR 614	Underwater Site Mapping and Visualization Techniques	3
EVR 616	Ocean Policy	3
EVR 625	Fisheries Socioeconomics and Management	3
EVR 626	Submerged Cultural Resource Management	3
EVR 662	Intermediate Spatial Analysis	3
EVR 710	International Ocean Law and Governance	3
EVR 720	Coastal Law and Policy	3
RSM 633	Survey of Telemetry for Animal Movement Research	1
RSM 645	Science Communication: Professional Writing	1
RSM 646	Presentation Boot Camp	1
RSM 649	Advanced Presentation Boot Camp	1
RSM 710	The Physical Environment of Marine Organisms	3
POL 631	Global Environment Politics	3
BIL 623	Advanced Biology of Marine Invertebrates	4

Sample Plan of Study

Year One		
Fall		**Credit Hours**
MBE 615	Tropical Marine Ecology	3
RSM 600	Introduction to Research Diving Techniques [*1]	3
RSM 667 or 664	Motorboat Operator Certification Course [*1] or Scientific Small Boating	1

RSM 612 or EVR 624	Statistics for Marine Scientists or Statistics and Data Analysis for Environmental Science and Policy	3
EVR 620, 720, or 616	Environmental Law and Policy [2] or Coastal Law and Policy or Ocean Policy	3
	Credit Hours	**13**
Spring		
MBE 621	Field Techniques and Instrumentation in Tropical Marine Ecology [3]	3
EVR 660 & EVR 661 or 610	Introduction to Marine Geographic Information Systems [1] or Environmental Planning and the Environmental Impact Statement	3
MBE 746	Marine Population Biology: Processes and Modeling [4]	3
EVR 610	Environmental Planning and the Environmental Impact Statement [4]	3
	Credit Hours	**12**
Summer		
MBE 805	MPS Internship [5]	2-6
	Credit Hours	**5**
	Total Credit Hours	**30**

* Enrollment is strongly encouraged. May be substituted for another elective with the approval of their academic advisor.

1 Can be taken in Fall or Spring

2 Additional Policy Options: EVR 631, EVR 710

3 Additional Field Options: MBE 614, MBE 637, MBE 644, MBE 641. Students may choose another field course in MBE or EVR with the approval of their academic advisor.

4 Suggested Options: MBE 638, MBE 623, MBE 618, EVR 634, EVR 629, RSM 601. Students may choose other electives with the approval of their academic advisor and/or course instructor if special permission is required.

5 Enrollment in 2 - 6 internship credits required during a student's time in MPS. Completion of less than 2 internship credits must be approved by MPS Director. Typically 2 semesters are needed to complete all aspects of the internship phase of MPS.

Mission

The mission of the Master of Professional Science degree in Tropical Marine Ecosystem (https://mps.rsmas.miami.edu/degree-tracks/tropical-marine-ecosystem-management/) (TME) is to prepare graduates for technical positions in marine conservation, management, and marine ecosystem science at one of a number of state and federal agencies, institutions, and NGOs by providing students with advanced training in the theoretical and practical aspects of tropical marine ecology. This program introduces students to theoretical aspects of nearshore, benthic ecosystems common to tropical and subtropical regions worldwide (coral reefs, seagrasses, and mangroves) and emphasizes threats facing these ecosystems. Practical aspects of the course exposes students to field methods and techniques, taxonomy and identification of common vertebrates, invertebrates, algae and marine plants, GIS and remote sensing of shallow water marine environments, scientific diving (through the American Academy of Underwater Sciences), and small boat handling (through the Department of the Interior's Motorboat Operator Certification Course).

Goals

The goal of the Master of Professional Science degree in Tropical Marine Ecosystem is to introduce students to theoretical aspects of nearshore, benthic ecosystems common to tropical and subtropical regions worldwide (coral reefs, seagrasses, and mangroves) with an emphasis on threats facing these ecosystems. The TME program assists students in the development and application of scientific field methods and techniques, taxonomy and identification of common vertebrates, invertebrates, algae and marine plants, GIS and remote sensing of shallow water marine environments, scientific diving (through the American Academy of Underwater Sciences), and small boat handling (through the Department of the Interior's Motorboat Operator Certification Course). The goal of the TME track is to prepare graduates for technical positions in marine conservation, management, and marine ecosystem science at one of a number of state and federal agencies, institutions, and NGOs by providing students with advanced training in the theoretical and practical aspects of tropical marine ecology.

Student Learning Outcomes

- Students will be able to effectively identify, understand, assess, and manage various tropical marine ecosystems.
- Students will demonstrate professionalism in all aspects of field and lab work during their internships.
- Students will submit a final, written report and deliver a final presentation based on the work completed in their internship.