M.P.S. IN APPLIED REMOTE SENSING

Overview

The routine use of remote sensing techniques has become an indispensable element of many activities in our modern world. A huge variety of sensors on satellites, airplanes, unmanned aerial vehicles ("drones"), and other platforms provide data for a variety of applications on a regular basis. The Master of Professional Science in Applied Remote Sensing (https://mps.rsmas.miami.edu/degree-tracks/applied-remote-sensing/) offered by the University of Miami's Rosenstiel School of Marine and Atmospheric Science (RSMAS) and Center for Southeastern Tropical Advanced Remote Sensing (https://www.rsmas.miami.edu/research/centers/cstars/) (CSTARS) provides theoretical knowledge and experiential learning for careers in the field of remote sensing in both public and private sectors. Working professionals in this field may also acquire additional training to expand their current knowledge and skillset.

Admission Requirements

Prerequisites:

1. Bachelor of Science degree (B.S.) in Mathematics, Physics, Geosciences, Engineering or an equivalent degree.
2. Successful completion of the following (or equivalent) undergraduate courses: Calculus, Statistics, Physics, Computer Programming (Matlab, IDL, C, or Fortran).

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
OCE 642		3
OCE 686		3
OCE 637	Natural Hazards: Atmosphere and Ocean (or ELECTIVE)	3
OCE 687		3
EVR 660 & EVR 661	Introduction to Marine Geographic Information Systems and Introduction to Marine Geographic Information Systems - Laboratory (or ELECTIVE)	3
RSM 612	Statistics for Marine Scientists (or ELECTIVE)	3
MGS 635	Geological Hazards	3
OCE 643		3
OCE 805	MPS Internship [1]	2-6
Total Credit Hours		**30**

[1] 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.

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
ATM 651	Introduction to Atmospheric Dynamics	3
ATM 662	Advanced Weather Forecasting	3
MBE 615	Tropical Marine Ecology	3
EVR 602	Economics of Natural Resources	3
EVR 610	Environmental Planning and the Environmental Impact Statement	3
EVR 616	Ocean Policy	3
EVR 620	Environmental Law and Policy	3
EVR 630	Port Operations and Policy	3
EVR 633	Decision Analysis: Natural Hazards and Catastrophes	3

EVR 677	Management and Conservation of Marine Ecosystems	3
EVR 720	Coastal Law and Policy	3
MGS 634	Hydrological Hazards	3
MGS 635	Geological Hazards	3
OCE 624	Applied Data Analysis	3
OCE 651	Applied Ocean Acoustics and Marine Mammals	3
OCE 705	Chemical Oceanography	3
OCE 790	Mechanics and Thermodynamics of the Air-Sea Interface	3

Suggested Plan of Study

Year One		Credit Hours
Fall		**Credit Hours**
OCE 642		3
OCE 686		3
RSM 612	Statistics for Marine Scientists [*]	3
MGS 635	Geological Hazards	3
	Credit Hours	**12**
Spring		
OCE 643		3
OCE 687		3
OCE 637	Natural Hazards: Atmosphere and Ocean [*]	3
EVR 660 & EVR 661	Introduction to Marine Geographic Information Systems and Introduction to Marine Geographic Information Systems - Laboratory	3
	Credit Hours	**12**
Summer		
OCE 805	MPS Internship [1]	2-6
	Credit Hours	**6**
	Total Credit Hours	**30**

[*]   or Elective
[1]   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

MPS Applied Remote Sensing (https://mps.rsmas.miami.edu/degree-tracks/applied-remote-sensing/), in conjunction with the Center for Southeastern Tropical Advanced Remote Sensing (https://www.rsmas.miami.edu/research/centers/cstars/) (CSTARS) provides students with theoretical knowledge and practical, real-world experiences geared towards a successful career in the field of remote sensing in both public and private sectors. This program is also appropriate for those already in the workforce who require additional training or are looking to expand upon their knowledge and skills.

Goals

The goal of the Applied Remote Sensing (ARS) track is to provide students with theoretical knowledge and advanced training of remote sensing technology in an effort to to acquire high-resolution satellite images and near-real-time measurements of sea surface temperatures, currents, wave heights, wind speeds, atmospheric temperature profiles, clouds, aerosols, and more. In relation to disaster response after hurricanes, earthquakes, floods, oil spills, monitoring ship traffic, floating sea ice, and more, students obtain an understanding of remote sensing technologies and applications, as well as training for the interpretation of the collected data.

Student Learning Outcomes

- Applied Remote Sensing students will learn theoretical knowledge and practical skills using a variety of remote sensing instruments to produce, measure, and interpret data from high-resolution satellite images for application to various end-users in the private and public sectors.
- Students will demonstrate professionalism in all aspects of field and lab work during their internships.
- Students will write up a final report and deliver a final presentation based on the work completed in their internship.