M.P.S. IN NATURAL HAZARDS AND CATASTROPHES

Overview
The University of Miami's Rosenstiel School of Marine and Atmospheric Science conducts world-class research on the earth systems responsible for natural disasters, including the atmosphere, the ocean and solid earth. To meet society's need for a skilled workforce, the Natural Hazards and Catastrophes (https://mps.rsmas.miami.edu/degree-tracks/natural-hazard-and-catastrophes/) track, within the Master of Professional Science (MPS) program, offers an educational opportunity for students seeking to fill positions offered by the private and civil sectors to assess risks and exposures associated with natural hazards.

Admission Requirements
Prerequisites:
1. Bachelor of Science degree (B.S.) or Bachelor of Arts degree (B.A.)
2. At least one of the following: one semester of Statistics or Calculus or 6 credits in Geoscience

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.

Accepting applications for Fall 2020 admissions:
• July 25th, 2019 - July 20th, 2020 (U.S. Citizens and Permanent Residents)
• July 25th, 2019 - June 1st, 2020 (International Applicants)

Accepting applications for Spring 2021 admissions:
• Now until December 1st, 2020 (U.S. Citizens and Permanent Residents)
• Now until November 1st, 2020 (International Applicants)

An application to the MPS program consists of the following (fall & spring admissions only):
• Online CollegeNet application
• Transcripts from all past/present academic institutions (colleges and universities), including all study abroad and community colleges and, if applicable, a transcript evaluation report from an approved international credentialing agency (for non-U.S. academic institutions).
• Valid Graduate Record Examination (GRE) scores. NOTE: GRE requirement suspended for Fall 2020 admissions only due to COVID-19.
• Three (3) letters of recommendation
• Valid TOEFL or IELTS scores (for international applicants)
• Personal statement (statement of purpose)

If admission to the MPS program is granted, it will be contingent upon receipt of all items listed above (including official transcripts and test scores) and the following for international applicants:
• Statement of Financial Responsibility Form (SFR) and corresponding bank letter
• Color copy of current visa (if available).
• Color copy of valid passport (must include picture page and barcode page)

Permanent Residents must provide a color copy of Permanent Resident Card (Green Card).

Previous graduate and undergraduate scholastic performance, work and volunteer experience, valid test scores (GRE, TOEFL/IELTS), and the letters of recommendation are all considered in evaluating an applicant.

Transcript from U.S. Academic Institutions:
Please make sure you possess the required undergraduate coursework and/or degree before applying. Official transcripts must be mailed or e-mailed directly from the relevant academic institution (Office of the Registrar) to the MPS office. Our email is mps@rsmas.miami.edu; mailing address is available on the MPS website's Contact Us page. If an applicant is not able to submit an unofficial transcript with his/her application, the applicant may submit unofficial transcripts via email to mps@rsmas.miami.edu. Unofficial transcripts are accepted for review purposes only, not for admission. If admission to the MPS program is granted, it will be contingent upon receipt of all official records. Please be advised, official transcripts will only be accepted if they are sent to us directly from the academic institution. Transcripts sent by you or issued to you (even if they are in a sealed envelope) are not considered official.

Transcripts from Non-U.S. Academic Institutions:
All graduate applicants who received degrees or are currently enrolled in a degree-seeking program from a college or university outside the United States (except applicants to Law* and Nursing**) must submit official transcripts and diplomas (if available) from all colleges and universities to an approved international credentialing agency. Applicants attending a non-U.S. institution for non-credit must also submit academic records to an approved evaluation agency.

Transcripts in a language other than English must be provided in that language and must be accompanied by a certified English translation. International applicants must also submit a copy of his/her diploma in the official language of the country from which the degree was awarded and provide a certified English translation of the diploma. Submit these items to an approved international credentialing agency. Follow the specific instructions of the selected evaluation agency to request a course-by-course evaluation with degree equivalency and grade point average (GPA) calculation. Applicants must request that the evaluation report and copy of all official documents used in the evaluation are sent directly from the approved evaluation agency to the MPS office mps@rsmas.miami.edu.

Letters of Recommendation:

Three (3) letters of recommendation are required for admissions consideration. Each applicant must request letters of recommendation from three (3) different references using the guidelines provided in the online application. Applications from CollegeNet may be submitted without letters of recommendation. However, an applicant’s file will not be reviewed by Track Leaders until all required admissions materials (including letters of recommendation) are received by the MPS office. Upon completion of the application, your references will receive an email from CollegeNet, requesting the online submission of the required documentation (questionnaire + letter of recommendation).

Academic references are ideal and highly preferred, but we will accept letters from employers and/or supervisors. Please do not request letters from friends, family, ministers, or coaches. If your references have trouble using the online submission portal, they may email their letters (signed and on letterhead) to the MPS office at mps@rsmas.miami.edu. We cannot accept letters that are not signed. Letters sent by the applicant or forwarded to the MPS office by the applicant will not be accepted.

GRE:

Due to COVID-19, the GRE requirement is suspended for Fall 2020 admissions only.

The MPS office must receive your official Graduate Record Examination test (GRE http://www.ets.org/gre) scores directly from ETS. Please use institution code 7690 (department code) when submitting your request with ETS. This code indicates delivery of test scores to the RSMAS campus, home of the MPS office.

A minimum, combined score of 297 (Verbal + Quantitative only) is required for admissions consideration. Applicants must also complete the Analytical Writing section of the GRE. However, the Analytical Writing score will not be calculated into your combined score, nor will it be used for tuition waiver eligibility. To learn about our merit-based partial tuition waivers, please visit our Financing Your Education page.

TOEFL/IELTS (for non-native English Speakers):

To prove language proficiency, students must take either the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS).

- Paper Based TOEFL (PBT) - minimum score is 550
- Internet Based TOEFL (IBT) - minimum score is 80
- IELTS (Academic) - minimum score is 6.5

Please use institution code 2919 (no department code). This institution code is for the TOEFL only; please note that the GRE institution code is different (see above).

If English is not your native language, the TOEFL/IELTS requirement may be waived if you hold an undergraduate or graduate degree from an academic institution within the United States or from one of the following English-speaking countries:

- Antigua and Barbuda
Australia
- Bahamas
- Barbados
- Belize
- Canada (except Quebec)
- Dominica
- Grenada
- Guyana
- Ireland
- Jamaica
- New Zealand
- Kitts and Nevis
- Lucia
- Vincent and the Grenadines
- Trinidad and Tobago
- United Kingdom

**Intensive English Program (IEP)**

The University of Miami’s Division of Continuing and International Education offers a fully-accredited Intensive English Program (IEP) to prepare individuals to understand and use English in a variety of academic, professional, and personal situations. Some of the services that IEP offers graduate students include an international teaching assistant training course, customized classes, LL.M. Intensive English, and volunteer opportunities.

**Personal Statement (statement of purpose):**

Please indicate your track of choice, and all relevant field, lab, and work experience (past and present) in your personal statement. Include your academic and professional goals, and how you envision the MPS program contributing to those goals. We strongly encourage you to include information and/or links to relevant publications, organizations, research projects, supervisors, collaborators, project results, and your role in relation to this.

**MPS Mailing Address:**

University of Miami  
Rosenstiel School Campus, MPS Office, Room S/A 132  
4600 Rickenbacker Causeway  
Miami, FL 33149

Email: mps@rsmas.miami.edu

Website: https://mps.rsmas.miami.edu/index.html

Phone: (305) 421-4340

Fax: (305) 421-4246

**Curriculum Requirements**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSM 612</td>
<td>Statistics for Marine Scientists</td>
<td>3</td>
</tr>
<tr>
<td>or MES 608</td>
<td>Biometrics in Marine Science</td>
<td></td>
</tr>
<tr>
<td>MES 620</td>
<td>Environmental Law and Policy (or ELECTIVE)</td>
<td>3</td>
</tr>
<tr>
<td>MES 633</td>
<td>Decision Analysis: Natural Hazards and Catastrophes</td>
<td>3</td>
</tr>
</tbody>
</table>
MGS 635  Geological Hazards  3
OCE 637  Natural Hazards: Atmosphere and Ocean  3
MGS 634  Hydrological Hazards  3
MES 660  Introduction to Marine Geographic Information Systems  3 & MES 661  and Introduction to Marine Geographic Information Systems - Laboratory  3
RSM 613  Statistical Modeling of Extreme and Rare Events (or ELECTIVE)  3
OCE 805  MPS Internship  6
Total Credit Hours  30

Elective Options
Students may take any graduate-level elective on the RSMAS campus with the consent of their faculty advisor and/or the MPS Director. Below are a few examples of courses past students in this program used as electives.

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCE 676</td>
<td>Wave Propagation in the Ocean Environment</td>
<td>3</td>
</tr>
<tr>
<td>ATM 765</td>
<td>General Circulation of the Atmosphere</td>
<td>3</td>
</tr>
<tr>
<td>ATM 731</td>
<td>Air-Sea Interaction</td>
<td>3</td>
</tr>
<tr>
<td>MES 720</td>
<td>Coastal Law and Policy</td>
<td>3</td>
</tr>
<tr>
<td>MES 618</td>
<td>Coastal Zone Management</td>
<td>3</td>
</tr>
<tr>
<td>MES 620</td>
<td>Environmental Law and Policy</td>
<td>3</td>
</tr>
<tr>
<td>MES 610</td>
<td>Environmental Planning and the Environmental Impact Statement</td>
<td>3</td>
</tr>
<tr>
<td>MGS 614</td>
<td>Geophysics</td>
<td>3</td>
</tr>
<tr>
<td>EPH 612</td>
<td>Global Health</td>
<td>3</td>
</tr>
<tr>
<td>EPH 600</td>
<td>Introduction to the Science Practice of Public Health</td>
<td>3</td>
</tr>
<tr>
<td>ATM 651</td>
<td>Introduction to Atmospheric Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>MES 630</td>
<td>Port Operations and Policy</td>
<td>3</td>
</tr>
<tr>
<td>OCE 642</td>
<td>Physics of Remote Sensing I - Passive Systems</td>
<td>3</td>
</tr>
<tr>
<td>OCE 643</td>
<td>Physics of Remote Sensing II - Active Systems</td>
<td>3</td>
</tr>
<tr>
<td>MGS 679</td>
<td>Plate Tectonics</td>
<td>3</td>
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<tr>
<td>MSC 321</td>
<td>Scientific Programming in the Atmospheric Sciences</td>
<td>3</td>
</tr>
<tr>
<td>CAE 660</td>
<td>Sustainable Construction</td>
<td>3</td>
</tr>
<tr>
<td>EPH 640</td>
<td>Urban Environment and Public Health</td>
<td>3</td>
</tr>
<tr>
<td>CAE 630</td>
<td>Water Resources Engineering II</td>
<td>3</td>
</tr>
<tr>
<td>OCE 721</td>
<td>Waves and Tides I</td>
<td>3</td>
</tr>
<tr>
<td>OCE 624</td>
<td>Applied Data Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

Suggested Plan of Study

**Year One**

**Fall**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSM 612 or MES 608</td>
<td>Statistics for Marine Scientists or Biometrics in Marine Science</td>
<td>3</td>
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<tr>
<td>MES 620</td>
<td>Environmental Law and Policy ( or ELECTIVE)</td>
<td>3</td>
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<tr>
<td>MES 633</td>
<td>Decision Analysis: Natural Hazards and Catstrophes</td>
<td>3</td>
</tr>
<tr>
<td>MGS 635</td>
<td>Geological Hazards</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

**Spring**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>OCE 637</td>
<td>Natural Hazards: Atmosphere and Ocean</td>
<td>3</td>
</tr>
<tr>
<td>MGS 634</td>
<td>Hydrological Hazards</td>
<td>3</td>
</tr>
<tr>
<td>MES 660 &amp; MES 661</td>
<td>Introduction to Marine Geographic Information Systems</td>
<td>3            &amp; Introduction to Marine Geographic Information Systems - Laboratory ( Can be taken in Fall or Spring)</td>
</tr>
</tbody>
</table>
Mission

The mission of the Natural Hazards and Catastrophes track is to provide students with the skills and knowledge necessary to understand earth system natural hazards (atmospheric, oceanic, geological and hydrological) and the data analytics tools required to assess the associated risks. The strategic selection of electives exposes students to legal and regulatory knowledge, communication and media training, and the development of project management skills, all designed to prepare them to address these challenges as future global leaders. MPS Natural Hazards and Catastrophes prepares its students for employment in several sectors, including insurance and re-insurance industry, architecture, emergency management, engineering, public health and science.

Goals

The goal of the Natural Hazards and Catastrophes track is to provide students with the knowledge necessary to understand earth system natural hazards (atmospheric, oceanic, geological and hydrological) and provide training of data analytics tools (e.g. statistics, data management, programming, GIS, and remote sensing) for the assessment of associated risks. With this training and advanced knowledge of natural earth system hazards, students are better prepared for employment in several sectors, including insurance and re-insurance industry, architecture, emergency management, engineering, public health and science.

Student Learning Outcomes

- Students will understand earth system natural hazards (atmospheric, oceanic, geological and hydrological) and apply data analytics tools (e.g. statistics, data management, programming, GIS, and remote sensing) required to assess associated risks. In addition, students will develop project management skills, understand the legal and regulatory frameworks and regulations, apply communication and media training to address earth system natural hazards.
- Students will demonstrate professionalism in all aspects of field and lab work during their internships.
- Students will submit a written, final report and deliver a final presentation based on the work completed in their internship.