

# M.P.S. IN NATURAL HAZARDS AND CATASTROPHES

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## 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://www.mps.rsmas.miami.edu/degree-tracks/natural-hazards-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 2021 admissions:

- July 25th, 2020 - July 5th, 2021 (U.S. Citizens and Permanent Residents)
- July 25th, 2020 - June 1st, 2021 (International Applicants)

Accepting applications for Spring 2022 admissions:

- Now until December 1st, 2021 (U.S. Citizens and Permanent Residents)
- Now until November 1st, 2021 (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 (<https://www.grad.miami.edu/apply/on-campus-graduate-programs/rosenstiel-school-of-marine-and-atmospheric-sciences-international-applicants/rsmas.html>) from an approved international credentialing agency (<https://www.naces.org/members/>) (for non-U.S. academic institutions).
- NOTE: The Graduate Record Examination (GRE) is not required for admission; however, an applicant may submit a valid score report for MPS merit-based partial tuition waiver (<https://mps.rsmas.miami.edu/prospective-students/financing-your-education/>) consideration. Three (3) or six (6) credits may be waived if eligible. GRE score reports are valid for 5 years from test date.
- Three (3) letters of recommendation
- Valid Test of English as a Foreign Language (TOEFL (<https://www.ets.org/toefl/>)) or International English Language Testing System (IELTS (<https://www.ielts.org/en-us/>) scores) for international applicants.
- Personal statement (also known as a 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 ([https://admissions.miami.edu/\\_assets/pdf/sample-bank-letter.pdf](https://admissions.miami.edu/_assets/pdf/sample-bank-letter.pdf))
- Color copy of current visa (if available).
- Color copy of valid passport (must include picture page and barcode page)
- If applicable: most recent I-94 travel record (<https://i94.cbp.dhs.gov/I94/#/home>)

Permanent Residents must provide a color copy of Permanent Resident Card (Green Card) (<https://www.uscis.gov/greencard/>).

Previous graduate and undergraduate scholastic performance, work and volunteer experience, valid test scores (GRE, TOEFL/IELTS) if applicable, 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 (<https://mps.rsmas.miami.edu/prospective-students/program-requirements/>) 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](mailto:mps@rsmas.miami.edu); mailing address is available on the MPS website's Contact Us (<https://mps.rsmas.miami.edu/contact/>) 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](mailto: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:**

Domestic or international applicants that have academic credits from or attended an international institution must have their educational credentials earned outside the United States verified by an approved international credentialing evaluation service. Each of the university's 11 schools and colleges has specific procedures that must be followed by international applicants. Visit our International Applications page for more information (<https://www.grad.miami.edu/apply/on-campus-graduate-programs/Application%20Instructions%20for%20International%20Students/international-students.html>).

**Documents Required**

Submit the following educational documents to an approved international credentialing evaluation service for evaluation:

- a) Official original diplomas and certificates in the original language, and
- b) Official original transcripts in the original language (names of courses, grades, and hours of instruction) for every year of study.

Documents in a language other than English must be accompanied by professional, certified English translations. Translations supplement but do not replace the official documents.

**Type of Evaluation Required**

The Rosenstiel School of Marine and Atmospheric Science is requiring international applicants to their programs to complete a course-by-course evaluation with GPA.

**Where to Submit Documents for Evaluation**

Josef Silny & Associates (JS&A), Inc. International Education Consultants, is the preferred evaluation vendor for international applicants to the University of Miami due to their competitive prices and high-quality service. Click here ([https://www.grad.miami.edu/\\_assets/pdf/2021-universityofmiami-graduate---course-by-course.pdf](https://www.grad.miami.edu/_assets/pdf/2021-universityofmiami-graduate---course-by-course.pdf)) for more information, including the Application for Evaluation of Foreign Educational Credentials. ([https://www.grad.miami.edu/\\_assets/pdf/2021-universityofmiami-graduate---course-by-course.pdf](https://www.grad.miami.edu/_assets/pdf/2021-universityofmiami-graduate---course-by-course.pdf))

Please note that international applicants are not required to use the services of JS&A. The international credential evaluation services of any approved vendor may be used. Click here (<http://naces.org/members.html>) to view a list of approved vendors.

Please ensure the vendor sends your evaluation directly to [mps@rsmas.miami.edu](mailto:mps@rsmas.miami.edu) for MPS applications

**Evaluation Fee**

Applicants are responsible for the evaluation fee.

**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 e-mail from CollegeNet, requesting the online submission of the required documentation (questionnaire + letter of recommendation). If your references have trouble using the online submission portal, they may e-mail their letters (signed and on letterhead) to the MPS office at [mps@rsmas.miami.edu](mailto: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.

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.

Students enrolled in our dual-degree program with the School of Law may use their letters of recommendation from the law school for use in his/her graduate application. Please be advised, RSMAS track leaders may request additional letters of recommendation for admissions consideration into the MPS program.

#### GRE:

The Graduate Record Examination (GRE) is not required for admission; however, an applicant may submit a score report for MPS merit-based partial tuition waiver (<https://mps.rsmas.miami.edu/prospective-students/financing-your-education/>) consideration. Three (3) or six (6) credits may be waived if eligible.

If requesting delivery of your official GRE score report, please use institution code 7690 (department code). This code indicates delivery of test scores to the RSMAS campus, home of the MPS office.

We currently offer a 3-credit or 6-credit merit-based tuition waiver through two different types of criteria:

#### OPTION 1: COMBINED GPA/GRE CRITERIA

- The minimum eligibility requirements for a 3-credit waiver is 297 on the GRE (a combined total score on the verbal and quantitative sections only), and a cumulative U.S. Grade Point Average (G.P.A .) of 3.0. The minimum eligibility requirements for a 6-credit waiver is 308 on the GRE (a combined total score on the verbal and quantitative sections only) and a cumulative U.S. Grade Point Average (G.P.A .) of 3.3.
- Applicants are still required to complete the analytical writing section of the GRE, however only the verbal and quantitative scores will be considered for tuition waiver purposes.
- The first reported GRE scores received by the MPS Office will be considered for waiver eligibility. However, applicants and newly-accepted students (not current students) may retake the GRE and submit an updated/higher score by July 23rd for U.S. citizens/permanent residents, and June 1st for international applicants.
- We recommend submitting updated scores after you've achieved your personal best. The MPS Office will consider the highest score listed on the GRE test report. GRE scores are valid up to 5 years from test date. Prospective applicants who submit an application before completion of the GRE are still eligible for waiver consideration, upon receipt of GRE scores by the MPS Office. Applicants and newly-accepted students (not current students) may submit "unofficial" GRE scores by downloading test scores from the ETS website while "official" records arrive in the mail. Send unofficial scores to mps@rsmas.miami.edu if you are unable to submit scores with your application. GRE scores are considered "official" if they are mailed directly to MPS from ETS.

#### OPTION 2: GPA-ONLY CRITERIA

- The minimum eligibility requirements for a 3-credit tuition waiver based on GPA alone is a GPA of 3.3. The minimum eligibility requirements for a 6-credit waiver based on GPA alone is a GPA of 3.6.

Please note that a portion of these waivers are sponsored through philanthropic missions and students may be matched with the best suited award. If a merit-based tuition waiver is awarded, an applicant will be notified upon acceptance and, depending of the source of the award, there may be certain requirements for acceptance. Those eligible to receive merit-based tuition waivers are not required to not apply, accept or reject the waiver; waivers are applied upon course registration. 3-credit waivers are applied to a student's first year at RSMAS. 6-credit waivers are distributed equally across your first two semesters at RSMAS (Fall & Spring semesters). Students who submit GRE scores will be awarded the higher of the two options. Students who do not submit GRE scores are only eligible for option 2.

#### English Proficiency Requirement

Academic success at the University of Miami depends on one's ability to communicate effectively in English. 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/Duolingo 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 the IEP offers graduate students include an international teaching assistant training course, customized classes, LL.M. Intensive English, and volunteer opportunities.

VISIT THE IEP WEBSITE (<https://iep.dcie.miami.edu/>)

#### 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](mailto:mps@rsmas.miami.edu)

Website: <https://mps.rsmas.miami.edu/index.html> (<https://mps.rsmas.miami.edu/>)

Phone: (305) 421-4340

Fax: (305) 421-4246

## Curriculum Requirements

Code	Title	Credit Hours
RSM 612 or MES 608	Statistics for Marine Scientists Biometrics in Marine Science	3
MES 620	Environmental Law and Policy (or ELECTIVE)	3
MES 633	Decision Analysis: Natural Hazards and Catastrophes	3

MGS 635	Geological Hazards	3
OCE 637	Natural Hazards: Atmosphere and Ocean	3
MGS 634	Hydrological Hazards	3
MES 660 & MES 661	Introduction to Marine Geographic Information Systems 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 <sup>1</sup>	2-6
<b>Total Credit Hours</b>		<b>30</b>

<sup>1</sup> Completion of 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 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.

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

## Suggested Plan of Study

Year One		Credit Hours
<b>Fall</b>		
RSM 612 or MES 608	Statistics for Marine Scientists or Biometrics in Marine Science	3
MES 620	Environmental Law and Policy ( or ELECTIVE)	3
MES 633	Decision Analysis: Natural Hazards and Catastrophes	3
MGS 635	Geological Hazards	3
<b>Credit Hours</b>		<b>12</b>
<b>Spring</b>		
OCE 637	Natural Hazards: Atmosphere and Ocean	3
MGS 634	Hydrological Hazards	3
MES 660 & MES 661	Introduction to Marine Geographic Information Systems and Introduction to Marine Geographic Information Systems - Laboratory ( Can be taken in Fall or Spring)	3

RSM 613	Statistical Modeling of Extreme and Rare Events (or ELECTIVE)	3
<b>Credit Hours</b>		<b>12</b>
<b>Summer</b>		
OCE 805	MPS Internship (Enrollment in 2- 6 internship credits required during a student's time in MPS. Completion of less than 2 intensrship credits must be approved by MPS Director. Typically 2 semesters are needed to complete all aspects of the internship phase of MPS. )	1-6
<b>Credit Hours</b>		<b>1-6</b>
<b>Total Credit Hours</b>		<b>25-30</b>

## 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.