

M.S. IN ATMOSPHERIC SCIENCES

Program Requirements

The applicable requirements will be those in effect during that academic year when the student first registered in the Program, unless stated otherwise in this Handbook or by the Program Director.

All RSMAS courses are listed on the RSMAS website. All courses taken by students should be approved by their advisors. Students are recommended to consult with their advisors and the ATM Program Director regarding their choices of courses. Deviations from the requirements must be approved by the advisor and the ATM Program Director.

ATM students have a common set of required core courses. Elective courses are chosen from offerings in ATM as well as other units of RSMAS and UM.

Curriculum Requirements

Code	Title	Credit Hours
The ATM M.S. degree requires 30 total credits. ¹		
Core Courses		9
ATM 634	Introduction to Atmospheric Chemistry	
ATM 651	Introduction to Atmospheric Dynamics	
ATM 652	Introduction to Atmospheric Physics	
Electives ²		15
Thesis Research		6
ATM 810	Master Thesis	
Additional Requirements		
RSM 700	Research Ethics	
Comprehensive Examination ³		
ATM Seminar ⁴		
ATM 701		
Total Credit Hours		30

¹ Minimum of 24 course credits and 6 thesis credits.

² The remaining course credits can be obtained by taking other graduate courses offered by ATM, RSMAS, or UM.

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- Material from the required core courses will appear on the Comprehensive Examination (along with material from other courses from the first year).
 - Grade of **Master's Pass**, **Pass** or **High Pass** needed to fulfill requirement.
 - For full-time students, the Comprehensive Examination should be taken near the end of their first year of graduate studies at RSMAS. This examination will be arranged by a Comprehensive Examination Committee which comprises the ATM Graduate Program Director and the instructors (or assignees) of the first year courses taken by the students.
 - The purpose of this examination is to evaluate students' understanding of materials in the courses completed up to the time of the examination and their capability of integrating these materials, and to determine whether the students are permitted to proceed in the program.
 - The Comprehensive Examination will consist of an oral part and a written part. The written part, which lasts no longer than 8 hours, consists of closed-book questions in the courses taken in the first year by each individual student. Each student must choose to answer four questions from those submitted, with a minimum of 1 question per course (up to the maximum of 4 questions). The oral part is administered by the ATM Graduate Program Director and one or more of the course instructors (or assignees), and may include questions from all the courses taken by the student. The oral exam lasts no longer than 2 hours for each student. The GPA comprises 20% of the Comprehensive Exam grade, and the written and oral parts of the Comprehensive Exams comprise 40% each.
 - A student's performance in this examination, together with his/her cumulative grade point average, will determine whether the grade of **High Pass**, **Pass**, **Master's Pass** or **Fail** is given by the Comprehensive Exam Committee. The examining board consists of faculty whose questions are answered by the student and any other RSMAS faculty who wish to participate.
 - **High Pass:** For students with no identifiable relevant weaknesses.
 - **Pass:** Students and advisors will receive feedback from the Comprehensive Exam committee on the strengths and weaknesses of the student, and possible recommendations of how to address those. This information can be used to help plan the next steps in the student's academic career.
 - **Master's Pass:** Students with this result will be required to defend a Master's thesis before considering whether to pursue a Ph.D. Students and advisors will receive feedback from the Comprehensive Exam committee on the strengths and weaknesses of the student, and possible recommendations of how to address those.
 - **Fail:** Students with this result will have an opportunity to re-take the exam once.

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- Attendance to the ATM seminars is required every semester.
 - ATM M.S. students must give at least one 15-minute presentation each year after the Comprehensive Examination.

Mission

The Department of Atmospheric Sciences (ATM), started in 2016, seeks to advance knowledge and understanding of the physical, chemical, and dynamical processes that determine our weather, our climate, and their interactions with the oceans and the continents. We train graduate students and young scientists to be leaders in the atmospheric sciences and related fields. Through our distinct strengths in climate dynamics, tropical meteorology, and cloud and aerosol processes, we strive to achieve excellence in research and education that will better inform the public and policy makers on how to prepare for hazards and changes in the weather-climate system.

Goals

Student Learning Outcomes

- Students will demonstrate a broad understanding of atmospheric science and how scientific research in their topical areas relates to societal issues.
- Students will demonstrate the ability to conduct high-quality atmospheric science research as evidenced by their thesis research.
- Students will demonstrate oral and written communication skills commensurate with employment as a research scientist or equivalent professional level scientist.