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 GSO 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 Academic Committee.

ATM students follow one of two concentrations: Physical Sciences or Chemical Sciences.

Physical Sciences Concentration

The ATM M.S. degree requires 30 total credits.  

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATM 651</td>
<td>Introduction to Atmospheric Science</td>
<td>9</td>
</tr>
</tbody>
</table>

**Physical Sciences Concentration**  

Students concentrating on Physical Sciences are required to take the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATM 611</td>
<td>Geophysical Fluid Dynamics I</td>
</tr>
<tr>
<td>ATM 765</td>
<td>General Circulation of the Atmosphere</td>
</tr>
</tbody>
</table>

**Electives**  

A minimum of 15 additional credits are required.

**Thesis Research**  

A Thesis Research course of 6 credits is required.

**Additional Requirements**  

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSM 700</td>
<td>Research Ethics</td>
</tr>
<tr>
<td>ATM Seminar</td>
<td>Comprehensive Examination</td>
</tr>
</tbody>
</table>

Total Credit Hours  

**Chemical Sciences Concentration**

The ATM M.S. degree requires 30 total credits.  

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<tr>
<td>ATM 651</td>
<td>Introduction to Atmospheric Science</td>
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</table>

**Chemical Sciences Concentration**  

Students concentrating on Chemical Sciences are required to take the following course:

<table>
<thead>
<tr>
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<th>Title</th>
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<tbody>
<tr>
<td>ATM 634</td>
<td>Atmospheric Chemistry</td>
</tr>
</tbody>
</table>

**Electives**  

A minimum of 18 additional credits are required.

**Thesis Research**  

A Thesis Research course of 6 credits is required.

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1 Minimum of 24 course credits and 6 thesis credits.

2 Required course for all ATM students.

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

4 Attendance to the ATM seminars is required every semester.

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3 Material from the required core courses will appear on the Comprehensive Examination (along with material from other courses from the first year).

4 Grade of Master’s Pass, Pass or High Pass needed to fulfill requirement.

5 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.

6 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.

7 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 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.

8 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.

9 High Pass: For students with no identifiable relevant weaknesses.

10 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.

11 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. This information can be used to help plan the next steps in the student’s academic career.

12 Fail: Students with this result will have an opportunity to re-take the exam once.

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13 NOTE: This is a new category where a student is NOT required to defend a Master’s thesis as was the case previously, but the student and advisor may of course still decide that a Master’s degree is the appropriate next step.

14 Master’s Pass: Students with no identifiable relevant weaknesses.

15 High Pass: For students with no identifiable relevant weaknesses.

16 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.

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18 Fail: Students with this result will have an opportunity to re-take the exam once.

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19 Attendance to the ATM seminars is required every semester.

20 ATM M.S. students must give at least one 15-minute presentation each year after the Comprehensive Examination.
### Additional Requirements

<table>
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<th>Course</th>
<th>Credit Hours</th>
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<tr>
<td>Comprehensive Examination</td>
<td>3</td>
</tr>
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<td>ATM Seminar</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credit Hours</strong></td>
<td><strong>30</strong></td>
</tr>
</tbody>
</table>

1. Minimum of 24 course credits and 6 thesis credits.
2. Required course for all ATM students.
3. The remaining course credits can be obtained by taking other graduate courses offered by ATM, RSMAS, or UM.
4. Attendance to the ATM seminars is required every semester.

**Research Ethics**

- 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.
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  - **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.
    - **NOTE**: This is a new category where a student is NOT required to defend a Master’s thesis as was the case previously, but the student and advisor may of course still decide that a Master’s degree is the appropriate next step.
  - **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.

**ATM Seminar**

- ATM M.S. students must give at least one 15-minute presentation each year after the Comprehensive Examination.