MASTER OF SCIENCE
TEACHING (MST) DEGREE

Program Learning Outcomes for the MST Degree

Upon completing the MST degree, students will be able to:

1. Solve problems based on Kepler’s Laws and Newton’s Laws using non-calculus mathematical techniques.
2. Demonstrate best practices for teaching scientific content.
3. Present an oral report on a scientific topic using presentation software such as Powerpoint.
4. Learn how to use scientific and astronomical equipment such as telescopes, digital cameras, GPS, and electronic devices, including multimeters, and/or portable planetariums.
5. Prepare a Final Project, which will include scientific research, educational research, and/or curriculum creation or analysis.

Requirements for the MST Degree

The MST degree is a non-thesis master’s degree. For general university requirements, please see Non-Thesis Master’s Degrees (ga.rice.edu/graduate-students/academic-policies-procedures/regulations-procedures-non-thesis-masters-degrees). Students pursuing the MST degree must complete:

- A minimum of 30 credit hours at the 500-level or above to satisfy degree requirements, including a minimum of 15 credit hours from Content or Content/Skills Courses.
- A final project. Students will prepare a final project which will include scientific research, educational research, and/or curriculum creation or analysis.

Each candidate for the Master of Science Teaching degree will specify an area of specialization. Examples of the areas of specialization are listed below:

- Astronomy
- Computer Science
- Earth Science
- Engineering
- Informal Science
- Integrated Physics and Chemistry (IPC)
- Mathematics
- Middle School Science
- Physics

Each student will have a 3-person committee, with at least 2 members from the tenure-track faculty, to approve the student’s proposed program, advise on which specific courses will best suit the student’s needs, and approve their final project. At least 1 of the members of the committee will be an experienced Education Professional, who will ensure the appropriateness of the courses to the educator’s program. At least 1 person of the committee will be an expert in the content area that is the student’s primary teaching interest.

Summary

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<th>Code</th>
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<th>Credit Hours</th>
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<td>Total Credit Hours Required for the MST Degree</td>
<td>30</td>
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Degree Requirements

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Content or Content/Skills Courses

Select a minimum of 5 Content or Content/Skills courses at the 500-level or above: 1

- ASTR 502  TEACHING EARTH AND SPACE SCIENCE
- ASTR 503  ASTRONOMY FOR TEACHERS
- ASTR 530  TEACHING ASTRONOMY LABORATORY
- ESCI 511  PUTTING EARTH SCIENCE INTO ACTION
- PHYS 501  PHYSICS OF THE RADIO

Additional Content/Skills Or Education Courses

Students must complete a minimum of 3 additional credit hours from content, skills, or education courses: 2

- EDUC 519  TEACHING AND LEARNING WITH INQUIRY
- EDUC 520  TEACHING DIVERSE LEARNERS
- EDUC 563  THEORY AND METHODS: MATHEMATICS

Research or Practicum

Select at least 3 and no more than 12 credit hours of research (educational or scientific) or practicum teaching: 3

- ESCI 515  GEOPHYSICAL FIELD WORK FOR EDUCATORS
- PHYS 800  GRADUATE RESEARCH

Footnotes and Additional Information

1 At least 9 credit hours should be directly related to the student’s major area of specialization. There may be some courses at the 400-level that satisfy this requirement, but students should be aware that if they take courses at the 400-level, they may need to take additional courses at the 500-level or above to satisfy overall degree requirements. Students may also satisfy the requirement, upon approval of their graduate committee, by completing courses from departmental (ASTR, BIOL, CHEM, EBIO, EDUC, ENGI, ESCI, MATH, NSCI, or PHYS) course offerings at the 500-level or above.

2 Students may also satisfy the requirement, upon approval of their graduate committee, by completing courses from departmental (ASTR, BIOL, CHEM, EBIO, EDUC, ENGI, ESCI, MATH, NSCI, or PHYS) course offerings.

3 Students must complete, at a minimum, 3 credit hours from graduate research or teaching practicum (ESCI 515 or PHYS 800), developing a research project in conjunction with a science or educational advisor.

Policies for the MST Degree

Transfer Credit

For Rice University’s policy regarding transfer credit, see Transfer Credit (ga.rice.edu/graduate-students/academic-policies-procedures/...
regulations-procedures-non-thesis-masters-degrees). Some departments and programs have additional restrictions on transfer credit. Students are encouraged to meet with their academic program’s advisor when considering transfer credit possibilities.

For additional information, please see the Science Teaching website: http://space.rice.edu/MST/.

**Opportunities for the MST Degree**

For additional information, please see the Science Teaching website: http://space.rice.edu/MST/