Teaching and Learning, MS

Science Education

The Master of Science in teaching and learning with a science education subprogram requires a minimum of 38 s.h. of graduate credit. Students must maintain a program grade-point average of at least 3.00.

The program is designed for teachers and supervisors (K–college) and professionals in related fields, such as medical education, college teaching, museum program management, and outreach programs. It is intended to provide experience in understanding teaching and learning and the research processes required to advance the field. Students complete coursework in four areas: science education, education, research, and science. Their individual programs of study are approved by the science education faculty.

The MS in teaching and learning with a science education subprogram requires the following coursework.

**Required Courses**

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<tr>
<th>Course #</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>EDTL:6757</td>
<td>Learning in the Science Classroom (no substitute for this course)</td>
<td>3</td>
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<tr>
<td>EDTL:6759</td>
<td>Advanced Pedagogy (no substitute for this course)</td>
<td>3</td>
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<tr>
<td>EDTL:7755</td>
<td>Independent Study in Science Education Research (taken two times for 3 s.h. each)</td>
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Two science content courses chosen in consultation with advisor. Courses numbered 3000 and above in biology (BIOL), chemistry (CHEM), computer science (CS), environmental sciences (ENVS), geography (GEOG), health and human physiology (HHP), and physics and astronomy (PHYS) may count.

A minimum of 12 s.h. chosen from these:

- EDTL:6758 Writing in the Science Classroom 3
- CSED:7338 Essentials of Qualitative Inquiry 3
- PSQF:4143 Introduction to Statistical Methods 3
- PSQF:6200 Educational Psychology 3
- PSQF:6220 Quantitative Educational Research Methodologies 3
- PSQF:6275 Constructivism and Design of Instruction 3

One additional qualitative or quantitative research methods course chosen in consultation with advisor:

- EDTL:6761 STEM Research and Leadership Seminar 3
- EDTL:6765 STEM Independent Research 3
- EDTL:7040 Advanced Topics in Teaching and Learning arr.

**Thesis**

Students must complete a thesis, for which they earn 2–4 s.h. of credit.

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<tr>
<th>Course #</th>
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<th>Hours</th>
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<tr>
<td>EDTL:6393</td>
<td>Master’s Thesis</td>
<td>2-4</td>
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**Final Examination**

A final oral examination is administered on campus in which candidates defend their thesis. This examination includes a critical inquiry into the purposes, methods, and results of the thesis research investigation.

The final examination is conducted by a committee of no fewer than three members of the graduate faculty. In some cases, the committee must include a member from outside science education; consult the department.

**Admission**

Applicants must meet the admission requirements of the Graduate College. They should hold an undergraduate major in a science area (or combination of science areas), in science education, or in elementary education with a science emphasis. The department recommends that applicants have teaching licensure/certification unless they are preparing for careers in allied health, museums, or community colleges.