STEM EDUCATION, MASTER OF SCIENCE IN EDUCATION

Offered by STEM Program (http://catalog.unk.edu/graduate/departments/science-math-education-program/)

Program Information and Admission Requirements

This degree is administered by a committee of representatives from the departments of Biology, Chemistry, Mathematics and Statistics, Physics and Physical Science, and Teacher Education.

The Master of Science in Education Degree in STEM Education is offered for students in science and math teaching professions who wish to deepen their knowledge in science/math content as well as pedagogy, curriculum and research. Students must be certified to teach in an area of science or mathematics and meet the general requirements of the Office of Graduate Studies to be eligible for this program. A student interested in pursuing the M.S.Ed. Degree in STEM Education should contact the program coordinator for specific information concerning admission criteria and degree work. All courses for a program of study should be chosen in consultation with an academic advisor prior to enrollment by the student.

Course Requirements

The program consists of 36 credit-hours of courses: 9 credit hours of teaching professional components (Educational Curriculum, Research, and Pedagogy courses), 24 credit hours of academic components (Integrated Option or Chemistry Option) and a 3 credit hour capstone course.

Integrated Option consists of a 12 credit-hour major emphasis (Biology, Chemistry, Math, or Physics/Physical Science), 6 credit-hours of content courses in math or science outside the major emphasis area, and 6 credit-hours of advisor-approved electives.

Chemistry Option is more focused on this subject requiring a minimum of 18 credit-hours of chemistry courses. The remaining 6 credit-hours may come from chemistry or the other science or math content courses.

Selection of the course options for a specific program should be made with the advisor before enrollment in the courses in order to develop the most effective and efficient program.

Admission Information

To qualify for work on this degree, a student must have an endorsement in Biology, Chemistry, Mathematics, Natural Science (including those labeled “Science”), Physics, or Physical Science and meet the general requirements for entrance to graduate studies. Applicants with middle-grades endorsements may be admitted depending on their level of undergraduate science and math preparation. Admission to degree work is contingent upon evaluation of the following:

- Transcripts
- A letter of intent that addresses the following statements: “Describe your current teaching position and discuss how completing the UNK STEM M.S.Ed. program will help you meet your educational and professional goals. Summarize your undergraduate science, math, and education training and how it has prepared you for our program. If your current teaching certificate or license is from a state other than Nebraska, include a brief explanation of the certification/licensing requirements in your state.”

This program is offered online only.

All students are required to complete an exit survey during the semester of graduation or program completion.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>TE 809P</td>
<td>Curriculum Implementation</td>
<td>3</td>
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<tr>
<td>TE 800</td>
<td>Education Research</td>
<td>3</td>
</tr>
<tr>
<td>TE 804</td>
<td>Curriculum Development in Multicultural Education</td>
<td>3</td>
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<tr>
<td>or TE 886P</td>
<td>Technology Tools for Teachers</td>
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<tr>
<td>STEM 888</td>
<td>STEM Education Capstone</td>
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Degree Option Requirements

Select one of the following: 24
Integrated Option
Chemistry Option
Total Credit Hours 36

Integrated Option

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<thead>
<tr>
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<th>Credit Hours</th>
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<tbody>
<tr>
<td>CHEM 805</td>
<td>Chemical Management &amp; Safety</td>
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<tr>
<td>CHEM 820</td>
<td>Principles of Inorganic Chemistry</td>
<td></td>
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<tr>
<td>CHEM 822</td>
<td>Transition Metal Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 823</td>
<td>Fundamentals of Nanoscience</td>
<td></td>
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<tr>
<td>CHEM 840</td>
<td>Advanced Principles of Organic Chemistry</td>
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Chemistry Core

CHEM 820 Principles of Inorganic Chemistry
CHEM 822 Transition Metal Chemistry
CHEM 823 Fundamentals of Nanoscience

Inorganic Chemistry Area - Take 3 hours from:
CHEM 820 Principles of Inorganic Chemistry
CHEM 822 Transition Metal Chemistry
CHEM 823 Fundamentals of Nanoscience

Organic Chemistry Area - Take 3 hours from the following:
CHEM 840 Advanced Principles of Organic Chemistry
Biochemistry Area - Take 3 hours from the following:

- CHEM 855 Principles of Biochemistry

Analytical Chemistry Area - Take 3 hours from the following:

- CHEM 864 Principles of Analytical Chemistry
- CHEM 866 Analytical Instrumentation

Physical Chemistry Area - Take 2 hours from the following:

- CHEM 883 Chemical Kinetics

Chemistry Electives

Take any additional 800-level CHEM courses  

Supporting Courses

Select 6 additional 800-level credit hours from the following departments: BIOL, CHEM, MATH, PHYS

Total Credit Hours

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1 Courses must be taken in at least two disciplines. These courses will be selected to meet student needs as indicated by previous course work and teaching duties.

2 Electives can be additional major emphasis area courses to meet the new requirement from the Higher Learning Commission that dual-enrollment teachers must possess a master's degree with at least 18 credit hours in the subject area taught.

3 If 12 credit hours of Chemistry Core courses are completed, then 6 credit hours of Chemistry Electives are required. If 13 credit hours of Chemistry Core courses are completed, then 5 credit hours of Chemistry are required.