SCIENCE/MATH EDUCATION PROGRAM

College of Natural and Social Sciences

Christopher Exstrom, Ph.D., Science/Math Education Program Director and Graduate Program Committee Chair - (308) 865-8565, exstromc@unk.edu

Holly Peterson, Science/Math Education Distance Education Coordinator - (308) 865-8043, msedsci@unk.edu

Master of Science in Education
• Science/Math Education (http://catalog.unk.edu/graduate/departments/science-math-education-program/science-math-education-mse) - Master of Science in Education Degree

Graduate Program Committee
Exstrom (Chair), Freeman, Gaskill (COE), Lazarova, Moser, Nebesniak

Science and Math Education (SMED)
SMED 888 – Science/Math Education Capstone  3 credit hours
This course is designed to culminate the student’s experience in the Science/Math Education program. Students will complete the comprehensive exam and a capstone project that integrates educational research, curriculum design, science/math content application, and assessment. Based on a literature evaluation of a specific concept or problem in science/math teaching, the student will develop a new curricular unit, or redesign an existing one, to be implemented in a high school or middle school science/math course that the student is teaching that semester. This unit must apply science/math content from their degree program courses and the student must assess the impact of the new/revised unit on student learning.
Prerequisite: Admission into Science/Math Education Program
Recommended completion of TE 800 and at least 24 hrs of Science/Math Education degree program including 6 or more hours in Major Emphasis category.

Biology (BIOL) - Major Emphasis Courses, Supporting Coursework, and Electives

Code | Title | Credit Hours
--- | --- | ---
CHEM 805 | Chemical Management & Safety for HS Teachers | 1

Chemistry (CHEM)- Major Emphasis Courses, Supporting Coursework, and Electives

Code | Title | Credit Hours
--- | --- | ---
CHEM 810 | Environmental Chemistry for High School Teachers | 3
CHEM 820 | Inorganic Chemistry I for High School Teachers | 3
CHEM 822 | Transition Metal Chemistry for High School Teachers | 2
CHEM 823 | Nanoscience for High School Teachers | 1
CHEM 855 | Biochemistry for High School Teachers | 3
CHEM 864 | Analytical Chemistry for High School Teachers | 2
CHEM 866 | Analytical Instrumentation for High School Teachers | 1
CHEM 883 | Chemical Kinetics for High School Teachers | 2
CHEM 899 | Special Topics | 1-3

Organic Chemistry for High School Teachers

Math (MATH) - Major Emphasis Courses, Supporting Coursework, Electives

Code | Title | Credit Hours
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MATH 862 | Mathematical Analysis for Teachers | 3
MATH 864 | Geometry for Teachers | 3
MATH 871 | Topics in Math | 3

Topics in Math: Current Research in Math Education; Discrete Math for Teachers; Modern Algebra with Geometry; Modern Algebra with Geometry; Using Mathematics to Understand our World; Algebraic Geometry; Mathematical Knowledge for Teachers

Physics/Physical Science (PHYS) - Major Emphasis Courses, Supporting Coursework, Electives

Code | Title | Credit Hours
--- | --- | ---
PHYS 800 | Advanced Physical Science | 3
PHYS 801 | Earth Science for High School Teachers | 3
PHYS 809 | Meteorology | 3
PHYS 810P | Mathematical Techniques in the Physical Sciences | 4
PHYS 811 | Astronomy for High School Teachers | 3
PHYS 813 | Intro to A&D Electronics | 4
PHYS 872P | Science Curricula | 3

Professional Component: Curriculum Course

Teacher Education (TE) - Professional Components, and Electives

Code | Title | Credit Hours
--- | --- | ---
CURRICULUM COURSE | TE 809P | Curriculum Implementation | 3
RESEARCH COURSE | TE 800 | Education Research | 3
### PEDAGOGY COURSE

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>TE 804</td>
<td>Curriculum Development in Multicultural Education</td>
<td>3</td>
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<td>OR</td>
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<tr>
<td>TE 886P</td>
<td>Technology Tools for Teachers</td>
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### ELECTIVE HOURS ONLY

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<tr>
<th>Course Code</th>
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<th>Hours</th>
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<tr>
<td>TE 803</td>
<td>Philosophy of Education</td>
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<tr>
<td>TE 805P</td>
<td>Overview of Assistive Technology</td>
<td>3</td>
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<tr>
<td>TE 808P</td>
<td>Human Relations</td>
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<tr>
<td>TE 810</td>
<td>Design and Development of Instruction</td>
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<td>TE 815P</td>
<td>The Effective Teacher: Enhancing Classroom Instruction</td>
<td>3</td>
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<td>TE 845</td>
<td>Contemporary Theory &amp; Practice in Reading</td>
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<tr>
<td>TE 854</td>
<td>Reading in the Content Areas</td>
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<td>TE 868</td>
<td>Copyright, Fair Use, and Ethics</td>
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<tr>
<td>TE 877</td>
<td>Developing Web-Based Educational Environments</td>
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