GEOSCIENCES B.S. - EARTH SCIENCE EDUCATION CONCENTRATION

Individuals interested in teaching in K-12 schools must complete a degree in the content area they want to teach plus the teacher preparation program through the Department of Teaching and Learning. Individuals must complete the teaching track within that degree program, which may contain different course requirements than the non-teaching track since the sequence of courses is designed to meet state standards. Upon completion of the degree program with the teaching track and the secondary licensure program, one will be eligible for a standard Montana teaching license in this content area.

- Secondary Education Licensure Program (http://www.coehs.umt.edu/departments/curinst/undergradprograms/seced/default.php)
- Licensure Degree Requirements (http://catalog.umt.edu/colleges-schools-programs/education-human-sciences/teaching-learning/lic-secondary-licensure)

Bachelor of Science - Geosciences; Earth Science Education Concentration

College of Humanities & Sciences

Degree Specific Credits: 65

Required Cumulative GPA: 2.0

Catalog Year: 2018-2019

Note: Students must be formally admitted to the Teacher Education Program and complete all of the professional education licensure requirements. See the Department of Teaching and Learning (http://catalog.umt.edu/colleges-schools-programs/education-human-sciences/teaching-learning) in the College of Education and Human Sciences for more information. A major GPA of 2.75 is required to be eligible for student teaching. This major does not qualify as a single field endorsement. Individuals must complete the teaching track of a second major or minor in another content area.

General Education Requirements

Information regarding these requirements can be found in the General Education Section (http://catalog.umt.edu/academics/general-education-requirements) of the catalog.

Summary

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Lower-Division Core Courses</td>
<td>15</td>
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<tr>
<td></td>
<td>Geosciences Core</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environmental Geoscience Course</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Upper-Division Geoscience Courses</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Upper-Division Geoscience Core Courses</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Upper-Division Geoscience Elective Course</td>
<td></td>
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<tr>
<td></td>
<td>Physics</td>
<td>10</td>
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</tbody>
</table>

Chemistry 8
Math 8
Astronomy 3
Teaching Methods Course 4
Total Hours 65

Lower-Division Core

Geosciences Core

Complete all of the following courses:
- GEO 101N Introduction to Physical Geology 3
- GEO 102N Introduction to Physical Geology Lab 1
- GEO 211 Earth's History and Evolution 4
- GEO 225 Earth Materials 4
Total Hours 12

Minimum Required Grade: C-

Environmental Geoscience Course

Complete the following course:
- GEO 105N Oceanography 3
Total Hours 3

Minimum Required Grade: C-

Upper-Division Geoscience Courses

Complete all of the following courses:
- GEO 304E Science and Society 3
- GEO 311 Paleobiology 3
- GEO 315 Structural Geology 4
- GEO 318 Climate System Dynamics 4
Total Hours 14

Minimum Required Grade: C-

Elective Upper-Division Geoscience Course

Note: GEO 320 is recommended to complete the upper division writing requirement in Geosciences but students may also select from the university-approved list of upper division writing courses to fulfill this requirement.

Complete one additional GEO course at the 300- or 400-level. 3

Physics

Complete one of the following Physics sequences: 10

Algebra- and Trigonometry-based Physics:
- PHSX 205N College Physics I
- PHSX 206N and College Physics I Laboratory
### Calculus-based Physics:
- PHSX 215N & PHSX 216N: Fund of Physics w/Calc I and Physics Laboratory I w/Calc
- PHSX 217N & PHSX 218N: Fund of Physics w/Calc II and Physics Laboratory II w/Calc

**Total Hours:** 10

**Minimum Required Grade:** C-

### Chemistry

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CHMY 121N</td>
<td>Introduction to General Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHMY 123</td>
<td>Introduction to Organic and Biochemistry</td>
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</tr>
<tr>
<td>CHMY 485</td>
<td>Laboratory Safety</td>
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**Total Hours:** 8

**Minimum Required Grade:** C-

### Mathematics

<table>
<thead>
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<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>M 162</td>
<td>Applied Calculus</td>
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<tr>
<td>M 171</td>
<td>Calculus I</td>
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<td>STAT 216</td>
<td>Introduction to Statistics</td>
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</table>

**Total Hours:** 8

**Minimum Required Grade:** C-

### Astronomy

<table>
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<td>ASTR 131N</td>
<td>Planetary Astronomy</td>
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</table>

**Total Hours:** 3

**Minimum Required Grade:** C-

### Teaching Methods Course

**Note:** The EDU 497 course number is used for multiple courses. Students should register for EDU 497 Methods: 5-12 Science.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>EDU 497</td>
<td>Teaching and Assessing</td>
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</tbody>
</table>

**Total Hours:** 4

**Minimum Required Grade:** C-

### Secondary Teaching Licensure

**Note:** For endorsement to teach earth science, a student also must gain admission to the Teacher Education Program and meet all the requirements for secondary teaching licensure (http://catalog.umt.edu/colleges-schools-programs/education-human-sciences/teaching-learning/lic-secondary-licensure). For more information, see the Teaching and Learning Department (http://catalog.umt.edu/colleges-schools-programs/education-human-sciences/teaching-learning).