EARTH SCIENCE EDUCATION

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 major/teaching track within that degree program, which may contain different course requirements than the academic major 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 a second teaching 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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<tbody>
<tr>
<td></td>
<td>Lower-Division Core Courses</td>
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<tr>
<td></td>
<td>Geosciences Core</td>
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<td>Environmental Geoscience Course</td>
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<td>Upper-Division Geoscience Courses</td>
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<td>Upper-Division Geoscience Core Courses</td>
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<td>Physics</td>
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<td>Math</td>
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<tr>
<td></td>
<td>Astronomy</td>
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Teaching Methods Course 4 Total Hours 65

Lower-Division Core

<table>
<thead>
<tr>
<th>Geosciences Core Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>GEO 101N</td>
<td>Introduction to Physical Geology</td>
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<td>GEO 102N</td>
<td>Introduction to Physical Geology Lab</td>
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<td>GEO 211</td>
<td>Earth's History and Evolution</td>
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<td>GEO 225</td>
<td>Earth Materials</td>
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Minimum Required Grade: C-

Environmental Geoscience Course

<table>
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<tr>
<td>GEO 105N</td>
<td>Oceanography</td>
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<td>Total Hours</td>
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Minimum Required Grade: C-

Upper-Division Geoscience Courses

Upper-Division Geoscience Core Courses

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>GEO 304E</td>
<td>Science and Society</td>
<td>3</td>
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<tr>
<td>GEO 311</td>
<td>Paleobiology</td>
<td>3</td>
</tr>
<tr>
<td>GEO 315</td>
<td>Structural Geology</td>
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</tr>
<tr>
<td>GEO 318</td>
<td>Climate System Dynamics</td>
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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.

<table>
<thead>
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Physics

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<tr>
<td>PHSX 205N</td>
<td>College Physics I</td>
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<tr>
<td>PHSX 206N</td>
<td>and College Physics I Laboratory</td>
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<tr>
<td>PHSX 207N</td>
<td>College Physics II</td>
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</tr>
<tr>
<td>PHSX 208N</td>
<td>and College Physics II Laboratory</td>
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Calculus-based Physics:
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<td>PHSX 215N &amp; PHSX 216N</td>
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Minimum Required Grade: C-

**Chemistry**

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<tr>
<td>CHMY 121N</td>
<td>Introduction to General Chemistry</td>
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<tr>
<td>CHMY 123</td>
<td>Introduction to Organic and Biochemistry</td>
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<td>CHMY 485</td>
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<td>Total Hours</td>
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Minimum Required Grade: C-

**Mathematics**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</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>
<td></td>
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<tr>
<td>STAT 216</td>
<td>Introduction to Statistics</td>
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<tr>
<td>Total Hours</td>
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</tbody>
</table>

Minimum Required Grade: C-

**Astronomy**

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>ASTR 131N</td>
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<td>Total Hours</td>
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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>
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<tr>
<td>EDU 497</td>
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Minimum Required Grade: C-