

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.umn.edu/departments/currinst/undergradprograms/seced/default.php>)
- Licensure Degree Requirements (<http://catalog.umn.edu/colleges-schools-programs/education/teaching-learning/lic-secondary-licensure/>)

Bachelor of Science - Geosciences; Earth Science Education Concentration

General Education Requirements

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

Summary

Code	Title	Hours
Lower-Division Core Courses		11
Geosciences Core		
Environmental Geoscience Course		
Upper-Division Geoscience Courses		21
Upper-Division Geoscience Core Courses		
Upper-Division Geoscience Elective Course		
Physics		10
Chemistry		9
Math		8
Astronomy		3
Teaching Methods Course		4
Total Hours		66

Degree Specific Credits: 66

Required Cumulative GPA: 2.0

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 in the College of Education 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.

Lower-Division Core

Geosciences Core

Code	Title	Hours
Complete all of the following courses:		
GEO 101N	Introduction to Physical Geology	3
GEO 102N	Introduction to Physical Geology Lab	1
GEO 201	Geologic Evolution of North America	4
Total Hours		8

Minimum Required Grade: C-

Environmental Geoscience Course

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

Minimum Required Grade: C-

Upper-Division Geoscience Courses

Upper-Division Geoscience Core Courses

Code	Title	Hours
Complete all of the following courses:		
GEO 302	Mineralogy and Optical Mineralogy	4
GEO 304E	Science and Society	3
GEO 315	Structural Geology	4
GEO 318	Earth's Changing Climate	3
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.

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

Minimum Required Grade: C-

Physics

Code	Title	Hours
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
PHSX 207N	College Physics II
& PHSX 208N	and College Physics II Laboratory

Calculus-based Physics:

PHSX 215N	Fundamentals of Physics with Calculus I
& PHSX 216N	and Physics Laboratory I with Calculus

PHSX 217N Fundamentals of Physics with Calculus II
& PHSX 218N and Physics Laboratory II with Calculus

Department (<http://catalog.umt.edu/colleges-schools-programs/education/teaching-learning/>).

Total Hours 10

Minimum Required Grade: C-

Chemistry

Code	Title	Hours
Complete all of the following courses:		
CHMY 121N	Introduction to General Chemistry	4
CHMY 485	Laboratory Safety	1
Total Hours		5

Minimum Required Grade: C-

Mathematics

Rule: Complete one math and one statistics course.

Code	Title	Hours
Complete all of the following courses:		
M 162	Applied Calculus	4
or M 171	Calculus I	
STAT 216	Introduction to Statistics	4
Total Hours		12

Minimum Required Grade: C-

Astronomy

Code	Title	Hours
Complete the following course:		
ASTR 131N	Planetary Astronomy	3
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.

Code	Title	Hours
Complete the following course:		
EDU 497	Teaching and Assessing	4
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/teaching-learning/lic-secondary-licensure/>). For more information, see the Teaching and Learning