



Academic Map Proposal

Proposal Number	13636		
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Are you the contact for this proposal?	Yes		
Does this proposal require approval from multiple Colleges or Departments?	Yes		
	<u>College</u>	<u>Dean</u>	<u>Department</u>
	Education	Jean Haar	Ed. Studies: K-12 and Sec. Programs
	Science, Engineering and Technology	Brian Martensen	Chemistry and Geology
	Social and Behavioral Sciences	Maria Bevacqua	Geography
			<u>Chair</u>
			Carrie Chapman
			Mary Hadley
			Donald Friend
Proposal Type	Academic Map		
Is this existing or proposed program?	Existing		
Full Program Name	Earth Science Teaching (5-12) BS		
Award	BS		
Is this existing or proposed emphasis?	No Emphasis		
Emphasis			
Option			
Version Number	1		
Version	Effective Fall 2017		
Version Explanation			
programType	Broad Major		
Minor Required	No		
Minor Specific			
Minor Specific			
Program Description	<p>The State of Minnesota grants science teacher licensure for grades 5-8 general science, 9-12 Chemistry, 9-12 Earth Science, 9-12 Life Science, and 9-12 Physics.</p> <p>Students earning a degree from Minnesota State Mankato will qualify for two licenses (1) 5-8 general science and (2) 9-12 specialty (except in the case of Chemistry where each license is earned separately).</p> <p>Each major requires the 31 credit general core and a science emphasis that ranges from 27-35 credits of science and science teaching methods courses. In addition, the student must complete a 30 credit professional education component and the 3 credit Drug Education course.</p> <p>The University Science Teaching Program must meet specific competencies to meet professional accreditation and licensure requirements. To stay within the required degree limits of 120 credit hours, students are strongly advised to select courses within the 44 credit general education program that meet both teaching program and general education needs. It is important for the student to meet with their advisor to assist with program planning.</p> <p>A minor is not required for any of the science teaching programs; however, to broaden one's teaching opportunities, double majors are encouraged. For further details, the student should check with one of the science teaching advisors for an overview of available opportunities.</p> <p>The Earth Sciences are focused on understanding the Earth's interrelated physical systems including: the atmosphere, biosphere, geosphere, hydrosphere, and Earth's place in the cosmos. Fundamental to Earth Science are the impacts of people on our planet's natural systems as well as the interaction of physical, chemical, and biological processes at all spatial scales ranging from submicroscopic to planetary, and over time scales from the immediate to billions of years. Thus, courses in Astronomy, Biology, Chemistry, Geography, Geology and Physics are required to fulfill the degree requirements. Majors in Earth Science can gain expertise in addressing critical societal issues related to environmental management, resource management, natural hazard management, resource exploration, atmospheric and climate sciences, water resources, and much, much more.</p>		
Admission Requirement	<p>GPA Policy. Students obtaining a degree in science teaching must maintain a minimum cumulative GPA of 2.50 in the sciences. Students who are not science teaching majors should consult an advisor concerning possible additional course requirements.</p> <p>P/N Grading Policy. Courses leading to a degree in science teaching may not be taken on a P/N basis except where P/N grading is mandatory.</p>		
Advising	<p>College of Social & Behavioral Sciences Advising Melissa Iverson, Student Relations Coordinator 114 Armstrong Hall 507-389-1351 College of Science, Engineering & Technology Advising Center Ken Adams, Student Relations Coordinator Trafton C-125 507-389-1521 College of Education Advising Mymique Baxter, Student Relations Coordinator 117 Armstrong Hall 507-389-1215 Email: mymique.baxter@mnsu.edu</p>		
Program Notes	<p>We encourage students to take courses in geographic information systems (GIS) and courses in other geospatial technologies. In Earth Science, more math is better. We also strongly encourage you to take math through Calculus I and II and Ordinary Differential Equations and one year of Physics. To become proficient in a foreign language, more than two semesters coursework is recommended as is a study abroad experience.</p>		

Program Phone Number	(507) 389-2617
Program Website(URL)	http://sbs.mnsu.edu/earthscience/

Fall Year 1

Designator	Course Number	Course Name	Credits	Milestones
BIOL	105W	General Biology I	4	Satisfies part of Gen Ed 3, and Gen Ed Writing Intensive, and is required for the major
Astronomy	101	Introduction to Astronomy	3	Required for the major
English	101	Composition	4	Satisfies Gen Ed 1A
GEOL	121	Physical Geology	4	Satisfies part of Gen Ed 3, all of Gen Ed 10, and is required for the major
FYEX	100	First Year Experience	1	Optional Gen Ed. Highly recommended

Fall Year 1 Notes

Spring Year 1

Designator	Course Number	Course Name	Credits	Milestones
BIOL	106	General Biology II	4	Required for the major
GEOL	122	Earth History	4	Required for the major
Gen Ed 4	n/a	Mathematical/Logical Reasoning	3+	Satisfies part of Gen Ed
CHEM	201	General Chemistry	5	Satisfies part of Gen Ed 3, and required for the major

Spring Year 1 Notes

Fall Year 2

Designator	Course Number	Course Name	Credits	Milestones
PHYS	211	Principles of Physics I	4	Required in the major
GEOG	217	Weather	4	Required in the major
GEOL	201	Mineralogy	4	Required in the major
AST	125	Observational Astronomy	3	Required in the major
Gen Ed 6	n/a	n/a	3	Make sure it is a purple course

Fall Year 2 Notes

PHYS 211 has a prerequisite of Math 112 & 113, or 115.

Spring Year 2

Designator	Course Number	Course Name	Credits	Milestones
Gen Ed 4	n/a	Speech and Oral Reasoning	3	
Physics	212	Principles of Physics II	4	Required in the major
KSP	202	Technology Integration in the Classroom	2	Required professional education
KSP	220W	Human Relations in a Multicultural Society	3	Required professional education, satisfies Gen Ed 7 & 11
KSP	222	Introduction to the Learner and Learning	2	Required professional education
HLTH	240	Drug Education	3	Required Gen Ed 5

Spring Year 2 Notes

Consider a Writing Intensive Gen Ed 6 or 9 course, two are required. This semester has only 14 credits. Be sure to take an average of 15 credits per term to graduate in 4 years.

Fall Year 3

Designator	Course Number	Course Name	Credits	Milestones
Gen Ed 8	n/a	Global Perspective	3	Consider finding a purple course
GEOG	315	Geomorphology	3	Required for the major
GEOL	310	Earth and Space Systems	3	Required for the major
PHIL	120W	Introduction to Ethics	3	Fulfills part of Gen Ed 6, and all of 9.
n/a	n/a	Electives in the major	3+	Required for major

Fall Year 3 Notes

PHIL 120W is not required as a Gen Ed as it is only one of several possibilities for Gen Ed 6 & 9 as well as being a writing intensive course; however, it is the only one that covers all three at once, thus it helps complete the degree more efficiently.

Spring Year 3

Designator	Course Number	Course Name	Credits	Milestones
CHEM	479	Teaching Physical Science	4	Required for the major
KSP	330	Planning, Instruction, and Evaluation in the Classroom	5	Required Professional Ed
n/a	n/a	Research Experience	1+	Required for the major
n/a	n/a	Electives in the major	4+	Required for the major
Gen Ed 5	n/a	n/a	3	Make sure it is a Purple course

Spring Year 3 Notes

Strongly consider beginning work on Certificate in Geographic Information Science (GISc), i.e., take GEOG 373 - 4cr, or perhaps a second major, although one is not required. Completed the Writing Intensive requirement? Completed two "Purple" Diverse Cultures courses? Many Gen Ed 5, 6 & 8 courses satisfy these requirements.

Fall Year 4

Designator	Course Number	Course Name	Credits	Milestones
KSP	440	Creating Learning Environments to Engage Children, Families, and Community	3	Required professional education
KSP	442	Reading, Literacy, and Differentiated Instruction in Inclusive Classrooms	3	Required professional education
n/a	n/a	Electives in the major	5+	Required for the major
Gen Ed 6	n/a	n/a	3	Make sure it is a Purple or Gold course
Gen Ed 5	n/a	n/a	3	Make sure it is a Purple course

Fall Year 4 Notes

Completed the Writing Intensive requirement? Completed two "Purple" Diverse Cultures courses? Many Gen Ed 5, 6 & 8 courses satisfy these requirements.

Spring Year 4

Designator	Course Number	Course Name	Credits	Milestones
KSP	464	Professional Seminar	1	Required professional education, credit awarded after fourth semester of enrollment in this course
KSP	477	5-12 Student Teaching	11	Required professional education

Spring Year 4 Notes