

BS in Geological Sciences

Degree Program Description

A Bachelor of Science degree in Geological Sciences provides students with the quantitative and conceptual skills they need to succeed in graduate work and a career as a professional geologist in industry, government or academia. The curriculum provides flexibility for students who seek to focus on a specific subdiscipline in the geosciences. Students interested in geophysics, for example, should use their electives to expand their background in math and to develop a broad knowledge of geology and geophysics. Other subdisciplines include geochemistry, paleobiology and hydrogeology. The capstone class is an award-winning 6-week summer Field Camp based in Lander, Wyoming. Many students participate in research projects with faculty members, usually involving fieldwork, and leading to a senior thesis. Their results are typically presented at a national meeting and in an oral defense in the department. Study abroad classes are typically offered every two to three years - recently to China, Chile, and Spain. Some BS graduates pursue careers in environmental consulting. Many others go into the oil and gas industry, which typically requires an MS degree.

Major Program Requirements

Majoring in geological sciences and earning a Bachelor of Science degree prepares the student for graduate work and a career as a professional geologist in industry, research or academia. The curriculum provides flexibility for students who seek to focus on a specific subdiscipline in the geosciences. Students interested in geophysics, for example, should use their electives to expand their background in math and to develop a broad knowledge of geology and geophysics. In addition, students must meet all degree, college, and university graduation requirements (<http://catalog.missouri.edu/academicdegreerequirements/universityrequirements/>) including university general education (<http://catalog.missouri.edu/academicdegreerequirements/generaleducationrequirements/>).

Major Core Requirements		52-55
GEOL 1100 or GEOL 1200 or GEOL 2130 or GEOL 1050 & GEOL 2100	Introduction to the Earth with Laboratory Environmental Geology with Laboratory Physical Geology for Scientists and Engineers Planet Earth and Independent Study in Geology	4
GEOL 2350	Earth and Life Through Time	3
GEOL 2360	Earth and Life Through Time Laboratory	1
GEOL 2400	Surficial Earth Processes and Products with Laboratory	4
GEOL 3250	Mineralogy	5
GEOL 3800	Sedimentology and Stratigraphy with Lab	4
GEOL 4150	Structural Geology	4
GEOL 4650	Plate Tectonics	3
GEOL 4900	Igneous and Metamorphic Petrology with Laboratory	4
GEOL 4992	Geology Field Camp	6
One additional geological sciences course at or above 2000 level (except GEOL 2130)		3
Four additional geological sciences courses at or above 3000 level (except GEOL 3085, can include 3 hr of GEOL 4950)		12
Collateral Math and Science Coursework		24-28

Chemistry Sequence

CHEM 1320	College Chemistry I	4
CHEM 1330	College Chemistry II	4

Physics Sequence: University Physics or College Physics

PHYSICS 2750 or PHYSICS 1210	University Physics I College Physics I	5-4
PHYSICS 2760 or PHYSICS 1220	University Physics II College Physics II	5-4

Mathematics Requirement

MATH 1500	Analytic Geometry and Calculus I	5
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Advanced Mathematics or Statistics (Calculus II or Statistics Option)

MATH 1700 or STAT 1200 & STAT 2200 or STAT 2500	Calculus II Introductory Statistical Reasoning and Introductory Statistical Methods Introduction to Probability and Statistics I	5
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Semester Plan

Below is a sample plan of study, semester by semester. A student's actual plan may vary based on course choices where options are available.

First Year

Fall	CR	Spring	CR
GEOL 1100 or 1200	4	GEOL 2350	3
CHEM 1320	4	GEOL 2360	1
MATH 1160	5	CHEM 1330	4
ENGLISH 1000	3	MATH 1500	5
		American History OR Political Science Course	3
16		16	

Second Year

Fall	CR	Spring	CR
GEOL 2400	4	GEOL 3800	4
GEOL 3250	5	PHYSICS 2750	5
MATH 1700	5	Social/Behavioral Science Course	3
Humanities/Fine Arts Course	3	Humanities/Fine Arts Course	3
17		15	

Third Year

Fall	CR	Spring	CR	Summer	CR
GEOL 4150	4	GEOL 4900	4	GEOL 4992 (Or Year 4 - Summer)	6
PHYSICS 2760	5	GEOL 2000+ Elective	3		
Second Language OR Alternative	3	GEOL 3000+ Elective	3		
		Second Language OR Alternative	3-5		
		Humanities/Fine Arts Course	3		
12		16-18		6	

Fourth Year

Fall	CR	Spring	CR
GEOL 4650	3	GEOL 3000+ Elective Course	3

GEOL 3000+ Elective Course	3 Elective Course	3
2000-Level Humanities/Fine Arts Course	3 2000-level Social/ Behavioral Course	3
Social/Behavioral Science Course	3	
Second Language OR Alternative	3-5	
	15-17	9

Total Credits: 122-126