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 to University (https://catalog.missouri.edu/academicdegreerequirements/universityrequirements/), general education (https://catalog.missouri.edu/academicdegreerequirements/generaleducationrequirements/), and College of Arts and Science (https://catalog.missouri.edu/collegeofartsandscience/#undergraduatetext) requirements, students must also meet the following major program requirements. All major requirements in the College of Arts and Science must be completed with grades of C- or higher unless otherwise indicated.

Major Core Requirements		**52-55**
GEOL 1100	Introduction to the Earth with Laboratory	4
or GEOL 1200	Environmental Geology with Laboratory	
or GEOL 2130	Physical Geology for Scientists and Engineers	
or GEOL 1050 & GEOL 2100	Planet Earth and Independent Study in Geology	
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 1400 & CHEM 1401	College Chemistry I and College Chemistry I Laboratory	4
CHEM 1410 & CHEM 1411	College Chemistry II and College Chemistry II Laboratory	4
Physics Sequence: University Physics or College Physics		
PHYSCS 2750	University Physics I	5-4
or PHYSCS 1210	College Physics I	
PHYSCS 2760	University Physics II	5-4
or PHYSCS 1220	College Physics II	
Mathematics Requirement		
MATH 1500	Analytic Geometry and Calculus I	5
Advanced Mathematics or Statistics (Calculus II or Statistics Option)		
MATH 1700	Calculus II	5
or STAT 1200 & STAT 2200	Introductory Statistical Reasoning and Introductory Statistical Methods	
or STAT 2500	Introduction to Probability and Statistics I	

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
MATH 1160 (Math and Quantitative Reasoning)	5	GEOL 2360	1
CHEM 1400 & CHEM 1401 (Biological or Physical Science Lab)	4	CHEM 1410 & CHEM 1411	4
ENGLSH 1000	3	MATH 1500	5
		Second major, minor, certificate, or elective	1
	16		**14**
Second Year			
Fall	**CR**	**Spring**	**CR**
GEOL 2400	4	GEOL; 2000+ Level	3
GEOL 3250	5	PHYSCS 2750	5
MATH 1700	5	Humanities; First Writing Intensive	3
		Missouri State Law Requirement: Social Science from Arts & Science	3
	14		**14**

Third Year					
Fall	**CR**	**Spring**	**CR**	**Summer**	**CR**
GEOL 3800	4	GEOL 4150	4	GEOL 4992 (Or Year 4 - Summer)	6
PHYSCS 2760	5	GEOL; 3000+ Level	3		
Second Language OR Alternative	4	GEOL; 3000+ Level	3		
		Second Language OR Alternative	4		
	13		**14**		**6**
Fourth Year					
Fall	**CR**	**Spring**	**CR**		
GEOL 4650 (Writing Intensive II)	3	GEOL 4900	4		
GEOL 3000+ Level	3	GEOL; 3000+ Level	3		
Second Language OR Alternative	4	Humanities	3		
Humanities; 2000+ Level	3	Behavioral Science	3		
Social Science	3				
	16		**13**		

Total Credits: 120