GEOLOGY, B.S.

Geology is the study of the Earth. Volcanoes, earthquakes, floods, landslides, erosion and plate tectonics are some of the things that geologists investigate and try to understand. Geology is a field-oriented science that involves mapping and analyzing rocks, deciphering the Earth's history from the rock record, locating natural resources, identifying natural and man-made hazards, and understanding Earth's natural processes.

Saint Louis University's bachelor of science degree places a stronger emphasis on chemistry, physics, calculus and fieldwork. It is more appropriate for students who intend to go on to graduate school or become a professional geologist.

Since the undergraduate geology program is relatively small compared to larger public universities, students have more opportunities to interact with faculty, get personalized attention and take advantage of opportunities inside and outside of the University. One highlight of students' education is the annual department field trip in which faculty, graduate and undergraduate students spend one week exploring a region of the country. Traveling through national parks, seeing natural systems not commonly encountered by students and learning firsthand about the Earth and its environment is rewarding to all who participate. The department heavily subsidizes these trips so that most students can participate.

Curriculum Overview

The geology curriculum is built around areas of knowledge fundamental to understanding the Earth.

Survey courses in Earth systems are the first two courses that students take. Intermediate and upper-division courses are focused on the building blocks of Earth and the processes that build and modify the Earth's features. These courses cover the study of minerals and rocks, weathering and erosion, sediment transport and deposition, development of mountain ranges and deformation of the Earth, and the movement of tectonic plates.

Students enrolled in the bachelor of science program also enroll in a six-week summer camp during which they learn to work in the field.

Fieldwork and Research Opportunities

During the annual geology department field trip, faculty, graduate and undergraduate students spend one week exploring a region of the United States. Students travel through national parks, see natural systems and learn firsthand about the Earth and its environment. SLU's Department of Earth and Atmospheric Sciences heavily subsidizes these trips so that most students can participate.

Students in the department may have the opportunity for part-time work assisting faculty members with their research. Such jobs expose students to various aspects of science as well as provide them with some income. Other part-time jobs may also be available elsewhere in the University. The city of St. Louis provides opportunities for science-related volunteer work in places such as the Saint Louis Science Center and Saint Louis Zoo.

Careers

A degree in the geosciences prepares students for a variety of interesting careers. Many geoscientists work in industry or for government agencies concerned with oil and natural gas exploration and production, mining, water resources, civil engineering, waste and pollution management, environmental impact assessment, conservation and land management, policy analysis and implementation education. Students in the program also acquire a solid background in critical thinking, effective communication and computer use.

Admission Requirements

Freshman

Begin your application for this program at www.slu.edu/apply. Saint Louis University also accepts the Common App.

All applications are thoroughly reviewed with the highest degree of individual care and consideration to all credentials that are submitted. Solid academic performance in college preparatory course work is a primary concern in reviewing a freshman applicant's file. College admission test scores (ACT or SAT) are used as an additional indicator of the student's ability to meet the academic rigors of Saint Louis University and are used as qualifiers for certain University scholarship programs. To be considered for admission to any Saint Louis University undergraduate program, the applicant must be graduating from an accredited high school or have an acceptable score on the General Education Development (GED) test.

Begin Your Application (http://www.slu.edu/apply.php)

Transfer

Begin your application for this program at www.slu.edu/apply.

Applicants must be a graduate of an accredited high school or have an acceptable score on the GED. An official high school transcript and official test scores are required only of those students who have attempted fewer than 24 transferable semester credits (or 30 quarter credits) of college credit. Those having completed 24 or more of college credit need only submit a transcript from previously attended college(s). In reviewing a transfer applicant's file, the office of admission holistically examines the student's academic performance in college-level coursework as an indicator of the student's ability to meet the academic rigors of Saint Louis University.

International Applicants

Begin your application for this program at www.slu.edu/apply.

All admission policies and requirements for domestic students apply to international students along with the following:

- Demonstrate English Language Proficiency (http://catalog.slu.edu/academic-policies/office-admission/undergraduate/english-language-proficiency)
- Proof of financial support must include:
  - A letter of financial support from the person(s) or sponsoring agency funding the time at Saint Louis University
  - A letter from the sponsor's bank verifying that the funds are available and will be so for the duration of study at the University
- Academic records, in English translation, of students who have undertaken postsecondary studies outside the United States must include the courses taken and/or lectures attended, practical laboratory work, the maximum and minimum grades attainable, the grades earned or the results of all end-of-term examinations, and any honors or degrees received. WES and ECE transcripts are accepted.

Scholarships and Financial Aid

There are two principal ways to help finance a Saint Louis University education:

- Scholarships: awarded based on academic achievement, service, leadership and financial need.
- Financial Aid: provided in the form of grants and loans, some of which require repayment.

For priority consideration for merit-based scholarships, applicants should apply for admission by Dec. 1 and complete a Free Application for Federal Student Aid (FAFSA) by March 1.

For information on other scholarships and financial aid, visit the student financial services office online at https://finaid.slu.edu.

Learning Outcomes

1. Graduates will know the founding principles in their field of study, as well as the facts and content appropriate to the field.
2. Graduates will be able to use their knowledge to reason about issues in their discipline.
3. Graduates will be able to solve quantitative problems in their discipline.

Requirements

Please contact the Geology program for further information and credit hour total requirement for the major.

Code	Title	Credits
Core Requirement		
College core requirements (p. 2)		54-63
For additional information about core courses (http://catalog.slu.edu/colleges-schools/arts-sciences/#policiestext)		
Required Courses		
CHEM 1110 & CHEM 1115	General Chemistry 1 and General Chemistry 1 Laboratory	4
CHEM 1120 & CHEM 1125	General Chemistry 2 and General Chemistry 2 Laboratory	4
EAS 1010 & EAS 1020	Earth Systems I-The Solid Earth and Earth's Environment I Lab	4
EAS 1030 & EAS 1040	Earth's Dynamic Environment II and Earth's Environment II Lab	4
EAS 2200 & EAS 2210	Mineralogy and Mineralogy Lab	4
EAS 2400	Field Techniques in the Geosciences	2
EAS 2420	Computer Applications in Earth Science	1
EAS 4050 & EAS 4060	Petrology and Petrology Lab	4
EAS 4100 & EAS 4110	Surface Processes and Surface Processes Laboratory	4
EAS 4300 & EAS 4310	Structural Geology and Structural Geology Laboratory	4
EAS 4370	Earth Dynamics	3
EAS 4500	Scientific Communications	3
MATH 1510	Calculus I	4
MATH 1520	Calculus II	4
Summer Field Camp †		6
Geology Elective Courses		
Select four of the following: ‡		12
CHEM 3330	Physical Chemistry 1	
EAS 1140	Earth History	
EAS 3050	Geomorphology	
EAS 4280	Environmental Geochemistry	
EAS 4410	Hydrology	
EAS 4980	Advanced Independent Study	
EAS 5xxx	Graduate Level Geol. Course	
MATH 2530	Calculus III	
Science Elective Courses		
Select one of the following:		4
PHYS 1310 & PHYS 1320	Physics I and Physics I Laboratory	
PHYS 1610 or PHYS 1620	Engineering Physics I Engineering Physics I Laboratory	
Total Credits		125-134

† Students must complete a six credit geology field camp via another university. Field camp is offered in the summer at several universities and is typically taken after the junior year. Students must meet the prerequisites of the field camp and obtain approval from the Geology program coordinator.

‡ At least 6 credits must be from EAS 3xxx/4xxx courses.

Continuation Standards

Students must have a minimum of a 2.00 GPA in their major courses within the Department of Earth and Atmospheric Sciences and required related credits (biology, chemistry, mathematics and computer sciences, physics, etc.) by the conclusion of their freshman year. Students that fall below a 2.00 GPA will be placed on probation. If a student fails to obtain at least a 2.0 GPA in their major courses and required related credits by the conclusion of their sophomore year they will not be allowed to continue in the program.

Bachelor of Science Core Curriculum Requirements

Code	Title	Credits
Core Components and Credits		
Foundations of Discourse (http://catalog.slu.edu/colleges-schools/arts-sciences/bs-core/foundations-discourse)		3
Diversity in the U.S. (http://catalog.slu.edu/colleges-schools/arts-sciences/bs-core/cultural-diversity)		3
Global Citizenship (http://catalog.slu.edu/colleges-schools/arts-sciences/bs-core/global-citizenship)		3
Foreign Language (http://catalog.slu.edu/colleges-schools/arts-sciences/bs-core/foreign-language)		0-9
Fine Arts (http://catalog.slu.edu/colleges-schools/arts-sciences/bs-core/fine-arts)		3
Literature (http://catalog.slu.edu/colleges-schools/arts-sciences/bs-core/literature)		6
Mathematics (http://catalog.slu.edu/colleges-schools/arts-sciences/bs-core/mathematics)		4
Science (http://catalog.slu.edu/colleges-schools/arts-sciences/bs-core/sciences)		8
Philosophy (http://catalog.slu.edu/colleges-schools/arts-sciences/bs-core/philosophy)		6

Social Science (http://catalog.slu.edu/colleges-schools/arts-sciences/bs-core/social-science)	6
Theology (http://catalog.slu.edu/colleges-schools/arts-sciences/bs-core/theology)	6
World History (http://catalog.slu.edu/colleges-schools/arts-sciences/bs-core/world-history)	6
Total Credits	54-63

Graduation Requirements

- Complete a minimum of 120 credits (excluding pre-college level courses [numbered below 1000]).
- Complete either the College of Arts and Sciences Bachelor of Arts or Bachelor of Science Core Curriculum Requirements
- Complete Major Requirements: minimum 30 credits required.
- Complete remaining credits with a second major, minor, certificate, and/or elective credits to reach the minimum of 120 credits required for graduation.
- Achieve at least a 2.00 cumulative grade point average, a 2.00 grade point average in the major(s) and a 2.00 grade point average in the minor/certificate, or related elective credits.
- Complete Dept/Program specific academic and performance requirements.
- Complete at least 50% of the coursework for the major and 75% for the minor/certificate through Saint Louis University or an approved study abroad program.
- Complete 30 of the final 36 credits through Saint Louis University or an approved study abroad program.
- Complete an online degree application by the required University deadline.

Roadmap

Roadmaps are recommended semester-by-semester plans of study for programs and assume full-time enrollment unless otherwise noted.

Courses and milestones designated as critical (marked with !) must be completed in the semester listed to ensure a timely graduation. Transfer credit may change the roadmap.

This roadmap should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor/mentor each semester. Requirements, course availability and sequencing are subject to change.

Course	Title	Credits
Year One		
Fall		
EAS 1010 & EAS 1020	Earth Systems I-The Solid Earth and Earth's Environment I Lab	4
General elective		3
A&S Core		3
A&S Core		3
UNIV 1010	Enhancing First-Year Success	1
	Credits	14
Spring		
EAS 1030 & EAS 1040	Earth's Dynamic Environment II and Earth's Environment II Lab	4
EAS elective (p. 4)		3
A&S Core		3
A&S Core		3
A&S Core		3
	Credits	16
Year Two		
Fall		
EAS 2200 & EAS 2210	Mineralogy and Mineralogy Lab	4
CHEM 1110 & CHEM 1115	General Chemistry 1 and General Chemistry 1 Laboratory	4
PHYS 1310 & CHEM 1125	Physics I and General Chemistry 2 Laboratory	4
A&S Core		3
	Credits	15
Spring		
EAS 2400	Field Techniques in the Geosciences	2
CHEM 1120 & CHEM 1125	General Chemistry 2 and General Chemistry 2 Laboratory	4
MATH 1510	Calculus I	4
General elective		3
	Credits	13
Year Three		
Fall		
EAS 4050 & EAS 4060	Petrology and Petrology Lab	4
MATH 1520	Calculus II	4
A&S Core		3
General elective		3
	Credits	14
Spring		
EAS 4100 & EAS 4110	Surface Processes and Surface Processes Laboratory	4
EAS 4300 & EAS 4310	Structural Geology and Structural Geology Laboratory	4
A&S Core		3
A&S Core		3
	Credits	14
Summer		
Field Camp		6
	Credits	6
Year Four		
Fall		
EAS elective (p. 4)		3
EAS elective (p. 4)		3
EAS 2420	Computer Applications in Earth Science	1
A&S Core		3
A&S Core		3
	Credits	13
Spring		
EAS 4370	Earth Dynamics	3
EAS 4500	Scientific Communications	3
EAS elective (p. 4)		3
A&S Core		3

A&S Core		3
	Credits	15
	Total Credits	120

Program Notes

At least two earth and atmospheric sciences electives must be at the 3000-4000 level. Science electives outside of earth and atmospheric sciences may also be approved by the program director.