

Geology, BS, BA

Emphases: Hydrogeology-Engineering Geology; Geoarchaeology; Applied Environmental Geoscience

Department: [Geology Department](#)

College: [College of Science](#)

Overview

About This Degree

Geology is the science that examines the planet Earth, its composition, history, and structure. Geologists integrate biology, chemistry, engineering, mathematics, and physics in the study of Earth's natural environments. Geologists explore for energy, mineral, and water resources and evaluate potential hazards due to earthquakes, floods, landslides, waste disposal, and volcanic eruptions. Geologists also provide fundamental information required to plan for cultural and industrial development, reduce geological hazards, identify potential resources, and assist in the design of waste-disposal facilities.

The BS program in geology meets the curriculum standards established by the American Institute of Professional Geologists.

Students receive a **BS** by completing all required courses in the major. To receive a **BA**, students must also gain proficiency in one or more foreign languages.

Career Options

Students who graduate with a bachelor's degree are well-prepared for graduate studies in geology, and students can also pursue careers in the following areas:

- Energy (oil, gas, coal, geothermal)
- Mining
- Environmental and building regulation
- Environmental consulting
- Natural hazards assessment (earthquakes, landslide, etc.)
- Energy and environmental planning
- Policy analysis
- Geographic data analyst

Hydrogeology-Engineering Geology Emphasis

- Engineering (cleaning up groundwater and soil, building structures in harmony with environments, etc.)

Geoarchaeology Emphasis

- Consulting (working with builders to ensure that structures aren't built in areas that compromise archaeological artifacts and sites)

[Career Services](#) provides counseling and information on hundreds of job and internship opportunities and even helps students apply and interview.

What it takes

Admissions Requirements

In addition to Utah State University's [admissions requirements](#), the geology program has additional requirements:

- **Freshmen:** New freshmen admitted to USU in good standing qualify for admission to this major.
- **Transfer students:** Transfer students from other institutions need a 2.2 total GPA for admission to this major. Students transferring from other USU majors need a total GPA of 2.0 for admission to this major.

International students have [additional admissions requirements](#).

Major Requirements

[Click here](#) to see course requirements for the **Bachelor of Science**.

[Click here](#) to see course requirements for the **Bachelor of Arts**.

Contact

Advising

All new USU students participate in a [New Student Orientation](#) program, where they receive detailed information about major requirements, registering for classes, and other important advising information.

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Get Involved

Professional Organizations, Honor Societies, and Clubs

American Geophysical Union: The American Geophysical Union is dedicated to furthering the geophysical sciences through the individual efforts of its members and in cooperation with other national and international scientific organizations.

Geological Society of America: Established in 1888, the Geological Society of America provides access to elements that are essential to the professional growth of earth scientists at all levels of expertise and from all sectors: academic, government, business, and industry.

Geology Club: The Geology Club holds regular meetings and activities, including field trips with professors and students, museum tours, geology displays for public school students, and more.

Labs, Centers, Research

With the second oldest [undergraduate research](#) program in the nation, USU offers students a wide range of opportunities to gain hands-on research experience. The [Undergraduate Research and Creative Opportunities](#) program allows students to apply for grants and receive funding. USU's [Honors Program](#) prepares students for excellent graduate programs by helping them build relationships with professors, participate in research projects, take smaller, more intensive classes, and develop leadership skills.

Geochemistry/Analytical Laboratory: This lab includes Panalytical XPert Pro X-ray diffractometer (XRF), a Philips PW-2400 X-ray fluorescence (XRF) instrument, a new inductively coupled plasma mass spectrometer (ICP-MS), and other analytical equipment.

Institute for Natural Systems Engineering: The INSE is a recognized leader in the development, testing, and application of multi-disciplinary assessment methods for aquatic ecosystems and instream flow assessment methodologies.

Luminescence Laboratory: This lab specializes in the analysis of the luminescence signals from quartz grains in geomorphological applications. It currently has two RISO TL/OSL readers and one with a single-grain attachment.

Rock Preparation Laboratory: This lab has a rock crusher, corers, trim saws, and thin-section equipment.

Utah Center for Water Resources Research: The UCWRR facilitates water research, outreach, design, and testing elements within a university environment that supports student education and citizen training.

Utah Water Research Laboratory: The UWRL works on nearly 250 water-related projects a year and has projects in all of Utah's 29 counties and more than 40 countries. The lab is one of the go-to places that addresses the technical and societal aspects of water-related issues, including quality, quantity, and distribution of water.

Water Initiative: Utah State University supports a broad community of students and faculty engaged in water education, research, and outreach. The USU Water Initiative provides an overarching umbrella for the activities of this community aimed at fostering interdisciplinary collaboration and collegial sharing of ideas related to water across the departments and colleges of USU.