UND UNIVERSITY OF NORTH DAKOTA

Geology

Geology is the science of Earth: its composition, evolution, and internal and external processes. . .

Earth is a complex, dynamic planet best understood by combining a broad spectrum of disciplines within the natural and applied sciences. The study of Earth integrates the geological disciplines of mineralogy, petrology, structural geology, paleontology, stratigraphy, sedimentation, geomorphology, geochemistry, and geophysics with elements of biology, chemistry, meteorology, and physics. We provide challenging programs in the geosciences adapted not only to the needs of undergraduate majors, but also non-majors seeking to gain a greater understanding of Earth, planetary environments, and resources. Our focus is on the geological interpretation and proper utilization of knowledge of materials, surface and internal features, dynamic processes, and developmental histories of Earth and other planetary bodies. Teaching and research are concentrated in the following areas: petroleum geology, environmental studies, hydrogeology, geological engineering, sedimentary geology, paleontology, surface processes, geomorphology, petrology, geochemistry, planetary geology, geophysics, and tectonics.

Understanding the impacts and roles of geological processes on time scales ranging from seconds to millions of years is a critical survival tool for all of humanity. Forethoughts and planning based on understanding the causes and consequences of natural disasters, such as earthquakes, floods, landslides, volcanic eruptions, and tsunamis could save thousands of lives and billions of dollars each year. Understanding the basis of global energy and mineral resources and the impacts of their extraction and use on climate change, ecology, and the environment would guide well-reasoned socioeconomic decisions. Understanding Earth's history, the evolution of life, and the concept of geologic time would greatly impact people's perception of science and our place in the universe. Providing this critical element of education to our students is the role of the Department of Geology and Geological Engineering.

What you can do with a degree in Geology. . .

Our students are employed in major employment sectors: the oil and gas industry, hydro/environmental/engineering geology, federal government, state geological surveys, mining and mineral industry, Department of Energy national laboratories, and universities and colleges. Our prominent alumni include presidents of oil companies, state geological survey directors, corporation CEO's, and prominent scientists and engineers.

Program Options. . .

The B.S. and B.A. in Geology are offered through the College of Arts and Sciences. Both degrees provide excellent preparation for graduate school or entry-level employment. The B.S. program combines a comprehensive education in geology with a strong background in related sciences and mathematics. This degree combines well with a minor in chemistry, physics, or mathematics. The B.A. in Geology provides a liberal arts emphasis in a flexible geology program. Double majors are possible, involving disciplines in the arts, humanities, and social sciences as well as aviation, business, communication, education, and pre-law.

Getting in. . .

Students may declare a major in Geology through the College of Arts and Sciences.

Unique characteristics of UND's Geology program. . .

The program provides hands-on research for students in helping solve environmental problems for state and federal agencies, industry, and environmental firms. Our alumni strongly support departmental programs. They typically retain an interest in the Department and the University, and have been very loyal and generous with both their funds and their time. Currently, 19 alumni donate their time to serve on our Alumni Advisory Committee.

Information continued on opposite side. . .

Office of Enrollment Services Carnegie Hall Room 100 250 Centennial Drive Stop 8135 Grand Forks, ND 58202-8135
800-Call-UND 701-777-4463 TTY 701-777-0424 go.und.edu enrollmentservices@mail.und.edu

It's A Fact. . .

- Leonard Hall (the home of all geology faculty and students) was designed specifically for the Geology department and contains ample laboratory, office, and classroom space.
- The F.D. Holland Jr. Geology Library is one of the largest in the upper Midwest and has a complete collection of U.S. Geological Survey topographic maps and publications.
- A Water Quality Laboratory (EARL) is well equipped for student use in Leonard Hall.
- Every room in Leonard Hall has fast Internet connections.
- The department has a variety of sophisticated equipment for teaching and research in field and laboratory areas such as hydrogeology, geophysics, stratigraphy, paleontology, mineralogy, petrology, and geomorphology.
- The North Dakota Geological Survey's Wilson M. Laird Core and Sample Library is located directly across the street from Leonard Hall and houses approximately 85 miles (137 km) of cores and approximately 40,000 boxes of drill cuttings of the Williston Basin, as well as an extensive collection of water well samples and cores.
- The Department has considerable scholarship resources.
- The long-range salary outlook in geology is good. Dwindling energy, mineral, and water resources along with increasing concerns about the environment and natural hazards present new challenges to society that need to be met by geoscientists. Salaries for college graduates with bachelor's degrees start at about $32,000-$35,000. Starting salaries for geoscientists with master's degrees are about $40,000-$45,000 and about $50,000 for Ph.Ds.
- In 2006 salaries for geoscientists in the petroleum industry were about $76,500 for bachelor's degrees, $83,000 for mater's degrees, and $90,000 for the Ph.D.
- Class size for courses in the major is 5 to 20 students.
- 11 full time faculty, 5 adjunct, and 4 emeritus professors serve the students, with 3 administrative support staff.
- Geology was first offered as a major at UND in 1883
- Number of students enrolled in the program ranges from 20 to 50.
- Four student organizations are active within the Department and the campus; one provides some scholarship support for students attending summer field camp or doing thesis research.
- UND offers more online courses and degree programs than ever before to provide you with additional flexibility. Please visit www.distance.und.edu for more information or call toll free at (800) 342-8230 or (701) 777-3044.

In Addition. . .

- International research in the UND Department of Geology and Geological Engineering includes volcanoes in the Andes; global climate change with field studies and collaborators in Brazil, Canada, Czech Republic, Germany, Jordan, Poland, and the United States; meteor impact craters in Manitoba and Maryland; paleontology in India, Madagascar, Africa, South America, and North America; and geomorphology in the western United States and Antarctica.

- Cutting-edge research in the department includes global climate change, CO2 sequestration, enhanced geothermal resources, wetlands hydrology, Cretaceous-Paleogene boundary paleontology, explosive volcanism, medical geology, surface processes, and aquifer chemistry.

- Department students have traveled with faculty to field sites in Peru, India, England, Belgium, Canada, and locations throughout the United States for research.

- Department faculty lead two to three student field trips each year to sites such as volcanoes in Hawaii, fossil locations in the Northern Plains, and tectonic regions in the western United States.

- The breadth of our undergraduate programs prepares our students for a broad spectrum of career choices: conventional and alternative energy and environmental geoscience including hydrology, ground and surface water chemistry, wetlands, and geological engineering.

For more information. . .

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