

GEOLOGY



Excellence in Action

COLLEGE OF ARTS AND SCIENCES

The Department of Geology at Kent State University offers four-year programs leading to the Bachelor of Arts and Bachelor of Science degrees in geology and the Bachelor of Arts degree in earth science. Advanced students can pursue graduate study leading to the Master of Science degree in geology and the Ph.D. degree in applied geology.

GENERAL UNIVERSITY REQUIREMENTS

Students pursuing bachelor's degrees complete a series of Kent Core requirements. Geology students take courses in English composition, mathematics, foreign language, humanities, fine arts, social sciences and basic sciences.

BACHELOR OF SCIENCE IN GEOLOGY

The Bachelor of Science in geology is designed for those interested in a professional career in geology. The field of geology is a dynamic science that explores every aspect of earth materials, processes, and history, enabling students to pursue many rewarding career paths. Students must complete 51 credits in geology courses focusing on earth materials, landforms, fossils, rock structures, geochemistry and field mapping, among others. Supplemental courses include introductory chemistry, physics, biology and mathematics. The program features a 6-credit capstone summer field course in the Black Hills, South Dakota and the national parks of Wyoming (Yellowstone and Grand Tetons). Within the Bachelor of Science, the environmental geology concentration provides students with specialized training for careers in the well-established and growing field of environmental geology. Students choose upper-division electives from a menu of courses focusing on hydrology, hydrogeology, engineering geology and environmental monitoring techniques.

BACHELOR OF ARTS IN GEOLOGY

The requirements for the Bachelor of Arts program include 35 semester hours of geology and 13 hours of chemistry, biology and mathematics. Because this program has fewer required courses, Bachelor of Arts students may take a large number of electives to create an academic concentration in another field that uses geology as a basis for a wide variety of careers. Thus the Bachelor of Arts program is ideal for students who seek a degree in basic science that will be applicable to careers such as business, law, government, public planning and policy making, journalism, environmental management or education.

BACHELOR OF ARTS IN EARTH SCIENCE

This program requires a minimum of 21 hours of biology, chemistry, mathematics and physics and 30 hours of geology, including courses in oceanography, minerals, rocks, fossils and landforms. A geography sequence is also required. The Bachelor of Arts in earth science is ideal for students interested in an interdisciplinary basic science leading to potential careers in allied environmental, ecological or earth system fields.

RECOGNITION

In a statewide competition, Kent State's undergraduate geology program received special recognition from the Ohio Board of Regents,

who awarded the department a "Program Excellence" grant of \$145,000. Kent State's Department of Geology is the only geology department in Ohio to have received this recognition since the inception of these awards in 1983. The funds were used to acquire instructional equipment, upgrade departmental library materials and maps, and initiate an undergraduate internship program.

SCHOLARSHIPS

To defray the cost of Summer Field Camp, a number of scholarships are available to qualified undergraduates. These are awarded annually by the department and by several of the student organizations within the department. Additionally, the department awards the Glenn W. Frank and Donald C. Gifford Scholarships to especially promising majors at the junior level. Their goal is to reduce the cost of tuition for recipients during their senior year.

INTERNSHIPS

To provide additional support for students and strong credentials upon graduation, the department coordinates a paid summer internship program for qualified undergraduate majors. Based on their academic/employment background and home location, sophomore through senior majors are placed with local resource companies, environmental firms and engineering testing companies for the entire summer.

FACULTY

The geology faculty are particularly active in research and teaching. Many of them are nationally known and several are international experts in their respective fields. All have published numerous articles in professional journals, many have published books and several serve or have served as editors of international geological journals. More than half of the faculty have been nominated for, and/or received, various teaching excellence awards.

Career Opportunities

Career opportunities in geology are more diverse than ever before because of national concern with dwindling resources, urban expansion and environmental problems. Geological employment is currently strong in energy, mineral and water resources, as well as in engineering and environmental geology. Moreover, the long-range employment picture looks excellent for geologists.

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FACILITIES

The Department of Geology, in McGilvrey Hall, is a comprehensive facility for instruction and research in earth sciences. In addition to state-of-the-art teaching areas, hallway museum displays and fully-equipped preparation laboratories, there are more than 15 research labs for X-ray analysis, sedimentological studies, paleobiological research, ground water and surface water studies, soil and rock mechanics testing, geophysical and geochemical exploration analyses, mineral separation, chemical analysis, and scanning electron and optical microscopy.

Major specialized equipment includes video and laser-based automated grain-size analyzers, graphite-furnace-AA and ICP spectrometers, LIC and XRD units, an SEM equipped with EDS, an IC, and XRF, field and paleomagnetic spinner magnetometers, compression/tension testing machines, triaxial tester, soil consolidometers, and direct shear test apparatus for rocks.

UNDERGRADUATE STUDENT ORGANIZATIONS

The Kent State University Geological Society provides an opportunity for geology majors to participate in extracurricular geological and social activities. Students also can join the Kent State chapter of Sigma Gamma Epsilon, a national geological honorary society active in a variety of service, professional and social areas and dedicated to professionalism and advancement in geology. Those with special interests in engineering geology may participate in the Kent State University Association of Engineering Geologists, one of 21 such student chapters nationwide, whose purpose is to promote interest and activity in applied geology.

CAREER OPPORTUNITIES

Most geologists are employed in environmental areas, including: exploring for resources, siting of engineering structures and facilities, monitoring environmental pollution and remediation of problems when they occur. Environmental work is found primarily in hydrogeological, environmental and engineering geology companies, as well as state and federal agencies. Other major

employers are petroleum and mining companies; railroads; chemical, cement and utility firms; real estate developers; and banking and investment firms.

The federal government employs many geologists for work in such organizations as the Environmental Protection Agency, the National Park Service, the Army Corps of Engineers, Water Pollution Control Administration and the U.S. Geological Survey. Graduates of the Bachelor of Arts in geology program also have excellent opportunities for employment in a wide variety of careers where an understanding of natural science is useful or critical for success. Geology can be a strong background for advanced study or career development in areas such as business, city management, regional development, planning, law, journalism and science writing.

Graduates of the Bachelor of Arts in earth science have diverse career opportunities that include: work as naturalists in parks and museums, rural-urban planners, lab technicians, and consultants in allied fields. Graduates of either of the Bachelor of Arts programs may also use their degrees as the basis for advanced study in geology. For students with the Bachelor of Arts degree who wish to become professional geologists, specific background courses will be required prior to completion of their advanced degrees. Generally, however, our Bachelor of Arts graduates have most of the basic courses needed for the Bachelor of Science degree, and a switch in career objectives can be made easily.

RESEARCH

Students can conduct field and/or laboratory research, often for course credit and publication. Students can volunteer in a lab, working with a faculty mentor and their graduate students on research projects, or work on externally funded research projects in the lab or out in the field. Many of these projects are funded by the National Science Foundation. Projects can also involve international travel. Some recent student projects include field work in the North American west, Europe, and South America, or oceanographic work in the Arctic, Atlantic, and South Pacific.

PLACEMENT

Kent State's Department of Geology plays an active role in placing its graduates by helping them with preparation of résumés, providing material on job interview techniques, securing job leads and facilitating the contact between graduates and prospective employers. Program graduates have entered all major employment areas for geologists, and the placement picture has been extremely good. Those who have not elected to enter graduate schools have joined engineering testing firms, environmental consulting companies, geochemical laboratories, ground water consulting firms and engineering companies.

Kent State's Bachelor of Science and Bachelor of Arts graduates have pursued graduate study at a number of major educational institutions, including the universities of: Brown, Columbia, Michigan State, Ohio State, Pennsylvania State, Purdue, Rice, Arizona, Berkeley, Colorado, Massachusetts, Minnesota, Missouri, Texas, Toronto, Utah, Wisconsin, Virginia Polytechnic and Yale, among many others.

Department of Geology

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