GEOLOGY

What can I do with this degree?

AREAS	EMPLOYERS	DESCRIPTIONS/STRATEGIES
PETROLEUM GEOLOGY Stratigraphy Sedimentology Structural Geology Geophysics Geomorphology Paleontology	Petroleum industry including oil and gas exploration, production, storage and waste disposal facilities Independent drilling companies Federal government agencies such as: Department of Energy State government Private entrepreneurial companies Universities and colleges Consulting firms Equipment suppliers	*Petroleum geologists use aerial photographs, field-work, and other data to understand and determine where oil or gas is accumulated.* Most petroleum geologists work where oil and gas are found: Texas, Oklahoma, Louisiana, California, offshore sites, or overseas in oil-producing countries. Because geologists often work closely with engineers, obtain some knowledge in engineering to aid communication. Gain knowledge of computer modeling and the Global Positioning System (GPS). Both are used to locate oil and gas deposits. This industry is subject to fluctuations, so be prepared to work on a contract basis.
MINING GEOLOGY Mineralogy Geochemistry Paleontology Stratigraphy Sedimentology Petrology Crystallography	Federal government agencies such as: Bureau of Mines Office of Surface Mining State government Oil and gas industry Coal companies Mining companies Well services and drilling companies Construction firms Quarries Railroad companies Universities and colleges Museums	*Mining geologists locate accumulations of minerals or metals, called ore deposits, and determine the best ways to develop the ore.* Mining geologists rely heavily on the computerized Geological Block Model to learn about a mineral deposit, so computer literacy is essential. Become familiar with environmental regulations and government permit issues.

AREAS	EMPLOYERS	DESCRIPTIONS/STRATEGIES
ENVIRONMENTAL GEOLOGY Sedimentology Stratigraphy Hydrogeology Geochemistry	Large and small consulting or engineering firms providing services for: -high tech, oil, gas, mining and other industries -federal, state and local government -utility companies -law firms -developers Federal government agencies such as: Environmental Protection Agency Bureau of Outdoor Recreation State government Construction companies Trucking firms Universities and colleges	*Environmental geologists focus on studying, protecting, and reclaiming the environment. For example, they may locate safe sites for hazardous waste facilities, try to preserve water supplies, or work in risk assessment to predict natural disasters.* Get a great deal of lab experience. Develop public speaking skills in order to present findings. Develop excellent writing skills in order to prepare reports and proposals. Develop leadership and organizational skills in order to manage projects. Gain a thorough understanding of federal and state government guidelines for the management of solid, liquid, and gaseous waste. Consider a law degree for work with land-use laws and legal matters.
ECONOMIC GEOLOGY Petrology	Mining companies Consulting firms Federal governement agencies such as: Bureau of Land Management Bureau of Reclamation State government Universities and colleges	*Economic geologists focus on the study of mineral deposits, exploration for new resources, development and mining of all non-hydrocarbon ore deposits, and environmentally-safe disposal of waste materials from mining activities.* Learn about policy issues at both the federal and state government levels. Obtain management and leadership experience in order to head up projects. Develop excellent writing skills to publish reports and to solicit grants from government, industry, and private foundations.

AREAS	EMPLOYERS	DESCRIPTIONS/STRATEGIES
EDUCATION Teaching Research Administration	Elementary/secondary public or private schools Colleges and universities Private research companies National laboratories	Obtain certification/licensing for public school teaching. Obtain Ph.D. for higher education teaching and/or advanced research and administrative positions. Develop grant writing skills. Become familiar with Geographic Information Systems (GIS).
GEOPHYSICS Oceanography Meteorology Space Sciences Solid Earth Exploration Seismology Geodesy Hydrology Geomagnetism Paleomagnetism Petrology Tectonophysics	Petroleum and natural gas companies Mining, exploration and consulting firms Research institutes Consulting firms Federal government agencies including: U.S. Geological Survey National Oceanic and Atmospheric Administration Department of Defense State government Private industry Universities and colleges	*Geophysicists use the Earth's electric, magnetic, and gravitational fields to explore the molten core, study the planet's shape, and map past movements of continents.* Obtain double major in physics. Take advanced courses in mathematics, chemistry and engineering. Obtain graduate degree for advancement and research. Learn special techniques through fieldwork. Check on state licensing requirements.

GENERAL INFORMATION

- Bachelor's degree is sufficient for entry-level industry positions.
- Master's degree is preferred for state survey work and advancement in industry and government.
- Ph.D. is required for college/university teaching and advanced research positions.
- Obtain volunteer, part-time, summer, internship, and/or co-op experience in different geological fields.
- Employment prospects are best for those with master's degrees, familiarity with advanced technologies such as computer modeling, and a willingness to relocate.
- Plan on taking a state exam to become a registered geologist.
- Obtain experience in mapping and surveying. Develop skills with measuring equipment as well as laboratory equipment and processes.
- Obtain a business background to help in managing projects and assessing economic costs and benefits.
- Have a love of the outdoors, an interest in nature, and a desire to travel.
- Join groups directed toward improvement of natural resources, environment, and pollution control.
- Join the student branch of the professional organization(s) related to interest area(s).
- Develop excellent computer skills.
- Learn a foreign language since work is often done in other countries.
- Develop physical stamina to work and do research in remote areas under various conditions.
- Excellent verbal and written communication skills are essential. The ability to market your skills and write proposals is necessary to maintain steady work. The ability to obtain grants may be necessary to continue a project.
- Majoring in two subject areas can increase employability, for example, geology and physics for geophysics, geology and foreign language for overseas assignments.

Prepared by the Career Planning staff of Career Services at The University of Tennessee, Knoxville. (1995, Revised 2000)
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