What can I do with a major in...

**Geoengineering**

**ACTIVITIES GEOENGINEERING MAJORS DO:**

Geological engineering is the application of the earth sciences to human problems that relate to the earth and earth systems. It is a broad, interdisciplinary field with many specialty areas such as: geotechnical site investigation for a variety of projects, rock and soil slope stability, environmental site characterization and planning, hydrogeology, groundwater studies and engineering, natural and manmade hazard investigations, and exploration and development of fossil fuel and mineral deposits. Geological engineers carry out site investigations for dams, plants, roads, railways, housing projects, mines, quarries, pipelines, petroleum production, forestry operations, and more. They interact with civil engineers to design essential parts of projects. They are responsible for environmental assessments or clean-up activities where pollution has occurred. They prospect for minerals, building material resources and drinking water. They carry out hazard and risk assessments and mapping for landslides and earthquakes. Geological engineers solve engineering problems and design engineering systems with, on, and in geological materials, while at the same time protecting the environment. For example, they learn how to evaluate a site on which a tunnel, dam, or road might be built. They learn about geologic hazards, such as earthquakes and volcanoes, and how to best protect people from them. They examine ways to search for and harvest energy resources. They also discover ways to protect the earth while still exploiting it through careful industrial practices.

Some specializations include: geoenvironmental engineering (preserving the environment through managing pollution) and geomechanical engineering (interpreting the geological variables in structural foundations and evaluating of natural geological hazards).

**INDUSTRIES GEOENGINEERING MAJORS WORK IN (SAMPLE LISTING):**

- Civil engineering firms
- Mining
- Energy
- Minerals
- Consulting
- Physiography
- Research and development
- Federal government
- Petroleum
- Hazardous waste
- City/county municipalities
- Environmental

**EMPLOYERS WHO HIRE GEOENGINEERING MAJORS (SAMPLE LISTING):**

- Schlumberger
- BP
- Cities and municipalities
- Esri
- U.S. Compliance Corporation
- Accenture
- Epic
- U.S. Steel
- WSP Environment and Energy
- FM Global
- Federal Highway Administration
- ExxonMobil
- Monsanto
- Minnesota Builders Exchange
- Cliffs Natural Resources Inc.
- Honeywell
- Alliant Energy
- General Electric
- Barr Engineering Company
- Exponent
- MN Department of Transportation
- American Engineering Testing Inc.

**TYPES OF POSITIONS FOR GEOENGINEERING MAJORS (SAMPLE LISTING):**

- **Environmental scientist:** Performs research in water supply issues, conducting assessment of groundwater and surface water supplies, assisting water utilities, and reviewing plans and projects proposed and conducted by the public and private sectors to assist in the development and implementation of water resource management policies.

- **Geomechanical engineers:** Applies the principles of engineering and geology to the study of geological materials, including soil, ground water, and rock foundations.

- **Hydrogeologist:** Conducts a range of field activities, including drilling, monitoring well installation, sampling, and oversight of contractors. Hydrogeologists evaluate and interpret field and sampling data, develop conclusions concerning site conditions based on data analysis, and prepare written plans and reports related to site investigation and remediation activities.

**Some of these positions may require an advanced degree.**
USEFUL WEBSITES FOR GEOENGINEERING MAJORS:

Department of Civil, Environmental, and Geo Engineering  
Federal Government Jobs  
Environmental Career Center  
Environmental Career Opportunities  
The Civil Engineer

USEFUL WEBSITES FOR ENGINEERING MAJORS:

Engineer.net  
Engineer Jobs  
Engineering Central  
Graduating Engineer  
ThinkJobs.com  
Engineering.com  
Engineer Info

PROFESSIONAL ORGANIZATIONS:

Association of Environmental and Engineering Geologists  
American Academy of Environmental Engineers and Scientists  
Environmental and Engineering Geophysical Society  
Geological Society of America  
U.S. Geological Survey  
Association for Women Geoscientists  
American Association of Petroleum Geologists  
National Mining Association  
The Society of Exploration Geophysicists  
Society of Economic Geologists  
American Council of Engineering Companies-MN chapter  
National Society of Professional Engineers  
Minnesota Society of Professional Engineers  
Society of Women Engineers

*Additional job/internship search websites and resources can be found at cse.umn.edu/career.

Information on this page was compiled from the “Careers in Science,” University of Minnesota departmental website, student-reported data, Sloan Career Cornerstone Center, “College Majors Handbook,” and various internet resources.