What can I do with a major in...

Earth Science

Earth scientists, also known as geoscientists, are stewards or caretakers of the earth's resources and environment. Investigating the earth, its soils, oceans, and atmosphere; forecasting the weather; developing land-use plans; exploring other planets and the solar system; determining environmental impacts; and finding new sources of useful earth materials are just a few of the ways geoscientists contribute to our understanding of the earth's processes and history. Geoscientists provide essential information for solving problems and establishing governmental policies for resource management, environmental protection; and public health, safety, and welfare. Other areas of earth sciences include geology, geophysics, hydrology, meteorology, and oceanography.

Geologists study the composition, structure, and history of the earth’s crust. They investigate the formation of rocks and landscapes and what has happened to them since their formation. They apply knowledge of chemistry, physics, biology, and math to problems such as finding oil, ores, and water. They may also decide which sites can safely support structures and advise on how to minimize environmental damage from natural hazards such as floods, landslides, or earthquakes.

Geophysicists use the principles of physics, mathematics, and chemistry to study not only the earth’s surface, but also its internal composition, ground and surface waters, atmosphere, oceans, and magnetic, electrical, and gravitational forces.

Hydrologists study the distribution, flow, and composition of underground and surface waters. Some hydrologists address problems of water supply, irrigation, erosion, and flood control.

Oceanographers study tides, winds, currents, fish, seaweed, and the sediments, valleys, and mountain ranges of the ocean floor. Their work aids weather prediction, fisheries, resource discovery and retrieval, and national defense. With the aid of data obtained from satellites, aircraft, and ground stations, meteorologists study winds, clouds, temperature patterns, and precipitation.

### INDUSTRIES
- Civil engineering
- Economic geology
- Environmental
- Government agencies
- Mineral energy
- Mining
- Oil/petroleum
- Paleontology
- Physiography
- Structural/subsurface geology
- Text and map publishers

### EMPLOYERS
- Antea Group
- Applied Engineering, Inc.
- Barr Engineering
- Bay West LLC
- Braun Intertec Corp.
- ExxonMobil
- MN Dept. of Natural Resources
- MN Pollution Control Agency
- National Park Service
- Summit Envirosolutions
- Washington Conservation Distr.
- WSP Global

### TECHNICAL SKILLS
- ChemDraw
- Excel
- GIS
- LoggerPro
- Mathematica
- MATLAB

CSE Career Outcomes

Average Starting Salary: $

Post-graduation Outcomes:*

**cohort size too small to report data due to privacy regulations
POSSIBLE POSITIONS

- **Economic geologist**: Explores and develops metallic and nonmetallic resources. Economic geologists study mineral deposits and find environmentally safe ways to dispose of waste materials from mining activities.

- **Environmental geologist**: Studies the interaction between the geosphere, hydrosphere, atmosphere, biosphere, and human activities. Environmental geologists work to solve problems associated with pollution, waste management, urbanization, and natural hazards, such as flooding and erosion.

- **Field geologist**: Investigates the structure and evolution of the earth and its natural resources to survey land and draw up safe building plans.

- **Mineralogist**: Studies mineral formation, composition, and properties.

- **Paleontologist**: Studies fossils to learn about life in prehistoric times.

- **Petroleum scientist**: Searches for and develops oil and natural gas resources.

- **Petrologist**: Takes observational, chemical, and physical data and uses it to develop theories on the origin of rocks.

- **Seismologist**: Studies earthquakes, including how they form and their patterns. Seismologists interpret the structure of the earth through the study of earthquakes, and predict when earthquakes will occur.

- **Soil scientist**: Studies soil and deals with agricultural issues and solutions.

- **Volcanologist**: Studies and researches volcanoes, including predicting when the next eruptions will occur.

**Some of these positions may require an advanced degree.**

GET INVOLVED

- Active Energy Club
- CSE K-12 Outreach
- CSE Ambassadors
- CSE International Ambassadors
- Engineers Without Borders
- National Society of Black Engineers
- Plumb Bob Honorary Leadership Society
- Science and Engineering Student Board
- Society of Asian Scientists and Engineers
- Society of Hispanic Professional Engineers
- Society of Women Engineers
- Solar Vehicle Project
- Tau Beta Pi
- TeslaWorks
- University of Minnesota Geological Society

RESOURCES

- AGI Web: [agiweb.org/workforce/brochure.html](agiweb.org/workforce/brochure.html)
- American Geophysical Union: [agu.org](agu.org)
- Association for Women Geoscientists: [awg.org](awg.org)
- Department of Earth Sciences: [esci.umn.edu](esci.umn.edu)
- Earth Science World: [earthscienceworld.org](earthscienceworld.org)
- Earth Works Jobs: [earthworks-jobs.com](earthworks-jobs.com)
- Geological Society of America: [geosociety.org](geosociety.org)
- Geology.com Jobs: [geology.com/jobs.htm](geology.com/jobs.htm)
- National Mining Association: [nma.org](nma.org)
- National Weather Association: [nwas.org](nwas.org)
- Paleontological Society: [paleosoc.org](paleosoc.org)
- Society of Economic Geologists: [segweb.org](segweb.org)
- The Oceanography Society: [tos.org](tos.org)
- U.S. Geological Survey: [usgs.gov](usgs.gov)

See the Major Binders available in the CSE Career Center’s Resource Center for more information about this major and career.

*Salary and Career Outcomes gathered from the 2016-2017 CSE Graduation Survey

Post-graduation outcomes reflect the percentage of students who were employed full-time in their field or were enrolled in a graduate program.

For detailed starting salary information see the CSE Career Center website.