

MAJOR IN GEOSCIENCES

The Major in Geosciences provides an academic and practical basis for diverse Earth science careers. The curriculum encompasses a strong geosciences core, and includes field studies in the Rocky Mountains and elsewhere integrated with on-campus classroom and laboratory studies. Students complete courses in mathematics, physical sciences, communications, and the liberal arts to develop effective quantitative, decision making, and communications skills. Four concentrations are offered to allow focus on career interests: Environmental Geology, Geology, Geophysics, and Hydrogeology.

- Geology Concentration (<https://catalog.colostate.edu/general-catalog/colleges/natural-resources/geosciences/geosciences-major/geology-concentration/>)
- Geophysics Concentration (<https://catalog.colostate.edu/general-catalog/colleges/natural-resources/geosciences/geosciences-major/geophysics-concentration/>)
- Hydrogeology Concentration (<https://catalog.colostate.edu/general-catalog/colleges/natural-resources/geosciences/geosciences-major/hydrogeology-concentration/>)

Learning Objectives

Upon successful completion of this major, students will be able to:

1. Demonstrate foundational skills and knowledge in all sub-disciplines of geology (physical and historical geology, earth materials, sedimentology and stratigraphy, structural geology)
2. Exhibit valuable skills in scientific reasoning, quantitative data analysis and reasoning; field, analytical, and remote sensing skills; spatial thinking and map use enabling them to contribute effectively to professional work and engage in original research.
3. Use visualization tools, theory, computation, and simulations to explain field observations and experimental results, make interpretations and test hypotheses.
4. Obtain, organize, and critically evaluate geologic information, and effectively present it through oral and written discourse with specialists and non-specialists.
5. Ethically and responsibly engage their knowledge of geology to address current global and scientific challenges.
6. Apply sustainability principles that incorporate complex environmental, economic, and social factors.

In addition, each concentration under the Major in Geosciences has several unique learning objectives. Please visit the concentrations below to view these learning objectives.

Potential Occupations

Opportunities exist for Geosciences graduates in the private and public sectors across a wide range of societally important and satisfying careers. Geoscientists are employed in environmental science and management, energy resources, natural hazards, water resources and management, mining, data and spatial sciences, construction services, insurance, and many other industries. Private employers in consulting as well as federal, state, county, and municipal agencies employ geoscientists. Schools, colleges, universities, national laboratories, and private research firms employ geoscientists. By obtaining teaching certification, graduates may become primary and secondary educators.

Graduates who go on to pursue advanced degrees in Geosciences enjoy a strong disciplinary base for graduate study in environmental studies, geomorphology, energy and mineral resources, seismology, hydrology, and more.

Concentrations

- Environmental Geology Concentration (<https://catalog.colostate.edu/general-catalog/colleges/natural-resources/geosciences/geosciences-major/environmental-geology-concentration/>)