

MAJOR IN GEOSCIENCES, GEOLOGY CONCENTRATION

The Geology concentration within the Geosciences major provides comprehensive, broad-based training in geology, emphasizing a practical and field-oriented approach. The core classes in the concentration cover the structure of the Earth and the nature and study of Earth materials - rocks, minerals, sediments. Elective classes allow students to study energy, mineral and water resources of the Earth, formation of rock types, landforms, and techniques such as remote sensing.

Learning Objectives

Upon successful completion of this program, 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.
7. Demonstrate in-depth skills and knowledge in earth materials.
8. Describe the Earth's physical and chemical nature and how this has evolved through Earth's four and a half billion year history.
9. Demonstrate in-depth skills in a sub-discipline of geology.