

# Geology

College of Natural Science and Mathematics  
Department of Geology and Geophysics  
(907) 474-7565  
www.uaf.edu/geology/

## M.S., Ph.D. Degrees

Minimum Requirements for Degrees: M.S.: 30 credits;  
Ph.D.: 18 thesis credits

Graduates in geology have broad backgrounds in the earth sciences and firm foundations in mathematics, physics and chemistry. There are many concentrations available in the geological sciences, and the suggested curricula are intended to be flexible enough to allow students to pursue their own emphasis. The M.S. program is tailored to the special research and study interest of the student.

There are about 40 professional geoscientists in residence on campus and graduate students normally participate in the ongoing research of these professionals. Teaching and research assistantships are available to graduate students in many of these areas.

## Graduate Program—M.S. Degree

**Concentrations: Economic Geology; General Geology; Petroleum Geology; Quaternary Geology; Remote Sensing; and Volcanology**

1. Complete the following admission requirements:
  - a. Submit GRE scores.
  - b. Complete a background at least to the level of a B.S. concentration in geology, geophysics or earth science.
2. Complete the general university requirements (page 182).
3. Complete the master's degree requirements (page 186).
  - a. Complete 6-12 thesis credits.
  - b. Complete any deficiencies concurrently with this degree.
4. Submit a written thesis proposal; and pass a written or oral comprehensive examination.
5. Complete and submit a written thesis and pass an oral defense of thesis.
6. Complete one of the following concentrations:

### Economic Geology

- a. Complete GEOS 675, 618 or equivalent; GEOS 418 or equivalent; 9 credits in applied geoscience; and at least one course in mineral economics or engineering management, as approved by the graduate advisory committee.
- b. Minimum credits required .....30

### General Geology

- a. Complete 12 credits at the 600-level as approved by the graduate advisory committee.
- b. Minimum credits required .....30

### Petroleum Geology

- a. Complete 12 credits of course work at the 600-level from courses in the following disciplines: structural geology, stratigraphy, sedimentology, geophysics and/or petroleum engineering, as approved by the graduate advisory committee.
- b. Minimum credits required .....30

### Quaternary Geology

- a. Complete 9 credits in Quaternary geology and at least one course in another area of Quaternary studies, as approved by the graduate advisory committee.
- b. Minimum credits required .....30

## Remote Sensing

- a. Complete GEOS 654 or GEOS 657 and 10 credits in remote sensing-related courses, as approved by the graduate advisory committee.
- b. Minimum credits required .....30

## Volcanology

- a. Complete 12 credits at the 600-level in volcanology-related courses, as approved by the graduate advisory committee.
- b. Minimum credits required .....30

## Graduate Program—Ph.D. Degree

1. Complete the following admission requirement:
  - a. Submit GRE scores.
2. Complete the general university requirements (page 182).
3. Complete the course work requirements for the appropriate M.S. concentration.
4. Complete the Ph.D. degree requirements (page 186).
5. As part of the Ph.D. degree requirements, complete the following:
  - a. Complete and pass a written and oral comprehensive examination.
  - b. Complete and submit a written thesis proposal for approval.
  - c. Complete a research program as arranged with the graduate advisory committee.
  - d. Complete 18 credits of thesis, write a thesis and pass an oral defense of thesis.
6. Minimum credits required .....18

*Note: In addition to courses listed under the geology and geophysics program, students should check the course listings under the College of Engineering and Mines and the marine science program.*

*Note: In addition to the facilities available directly through the instructional program, UAF has active research laboratories in the fields of seismology, volcanology, paleomagnetism, isotope geochronology, glaciology and ice physics in the Geophysical Institute (see Geophysical Institute under Research). These laboratories can frequently provide topics for M.S. and Ph.D. theses. Other laboratories are also available in other divisions on campus, as listed under Research Institutes and Centers, page 17.*