B.S., GEOSCIENCE

Concentrations: Geology, Paleontology, Geospatial Sciences and Geophysics

Minimum Requirements for Degree: 120 credits

Students must earn a C- grade or better in each course.

General University Requirements
Complete the general university requirements. (http://catalog.uaf.edu/bachelors)

General Education Requirements
Complete the general education requirements. (http://catalog.uaf.edu/bachelors/general-education-requirements)

As part of the general education requirements, complete:
- CHEM F105X General Chemistry I
- MATH F251X Calculus I

B.S. Degree Requirements
Complete the B.S. degree requirements. (http://catalog.uaf.edu/bachelors/summary-of-bachelors-degree-reqs/#bachelorofsciencetext)

Program Requirements
- GEOS F101X The Dynamic Earth 4
- GEOS F112X The History of Earth and Life 4
- GEOS F309 Tectonics 3

Concentrations
Select one from the following concentrations: 62-73
- Geology
- Paleontology
- Geospatial Sciences
- Geophysics

Total Credits 73-84

Concentrations

GEOLGY

Program Requirements
- CHEM F106X General Chemistry II 4
- PHYS F103X College Physics I 4
- PHYS F104X College Physics II 4
- GEOS F213 Mineralogy 4
- GEOS F214 Petrology and Petrography 4
- GEOS F225 Field and Computer Methods in Geology 2
- GEOS F304 Geomorphology 3
- GEOS F314 Structural Geology 4
- GEOS F315 Paleobiology and Paleontology 4
- GEOS F322 Stratigraphy and Sedimentation 4
- GEOS F351 Field Geology 1,2 8
- GEOS F430 Statistics and Data Analysis in Geology 3
- STAT F200X Elementary Probability and Statistics 3
- or STAT F300 Statistics 3

Select at least two from the following electives: 5-7
- GEOS F453 Palynology and Paleopalynology
- GEOS F485 Mass Extinctions, Neocatastrophism and the History of Life
- GEOS F486 Vertebrate Paleontology
- GEOS F488 Undergraduate Research

Complete the requirements for a minor in biological sciences 20

Total Credits 71-73

1 GEOS F351 is offered at UAF during the summer of odd-numbered years. Students may substitute a 6-credit field geology class at another institution. The geology and geophysics undergraduate advisor will assist students in placement in an approved field geology class.

2 Fulfills the baccalaureate capstone requirement.

PALEONTOLOGY

Program Requirements
- CHEM F106X General Chemistry II 4
- PHYS F103X College Physics I 4
- GEOS F213 Mineralogy 4
- GEOS F214 Petrology and Petrography 4
- GEOS F225 Field and Computer Methods in Geology 2
- GEOS F314 Structural Geology 4
- GEOS F322 Stratigraphy and Sedimentation 4
- GEOS F351 Field Geology 1,2 8
- GEOS F430 Statistics and Data Analysis in Geology 3
- STAT F200X Elementary Probability and Statistics 3

Select at least two from the following electives: 5-7
- GEOS F453 Palynology and Paleopalynology
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- GEOS F486 Vertebrate Paleontology
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Complete the requirements for a minor in biological sciences 20

Total Credits 71-73

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GEOSPATIAL SCIENCES

Program Requirements

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<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tr>
<td>CHEM F106X</td>
<td>General Chemistry II</td>
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<td>PHYS F103X</td>
<td>College Physics I</td>
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<td>PHYS F104X</td>
<td>College Physics II</td>
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<td>GEOS F213</td>
<td>Mineralogy</td>
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<td>GEOS F214</td>
<td>Petrology and Petrography</td>
<td>4</td>
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<tr>
<td>GEOS/GEOG F222</td>
<td>Fundamentals of Geospatial Science</td>
<td>3</td>
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<td>GEOS F225</td>
<td>Field and Computer Methods in Geology</td>
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<td>GEOS F304</td>
<td>Geomorphology</td>
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<td>GEOS F314</td>
<td>Structural Geology</td>
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<td>GEOS F351</td>
<td>Field Geology, 1.2</td>
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<tr>
<td>STAT F200X</td>
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Electives

Remote sensing electives
Select at least two of the following: 4-7

- GEOS F408 Photogeology
- GEOS F422 Geoscience Applications of Remote Sensing
- GEOS F488 Undergraduate Research
- NRM F641 Natural Resource Applications of Remote Sensing

GIS electives
Select at least two of the following: 6-7

- GEOG F309 Digital Cartography and Geovisualization
- GEOS F435 GIS Analysis
- GEOS F458 Applications of GPS and GIS in Geophysics
- NRM F338 Introduction to Geographic Information Systems

Complete 9 additional credits of upper-division GEOS courses or other upper-division courses approved by the undergraduate advisor including one course from the following:

- GEOS F317 Paleontological Research and Laboratory Methods
- GEOS F375 Oral Communication Skills for Geoscientists
- GEOG F420 Geopolitics of Energy
- GEOG F427 Polar Geography
- GEOG F483 Research Design, Writing and Presentation Methods
- GEOG F490 Geography Seminar
- GEOG F493 Special Topics

Select one additional course from the following:

- GEOS F309 Tectonics
- GEOS F315 Paleobiology and Paleontology

GEOS F351 is offered at UAF during the summer of odd-numbered years. Students may substitute a 6-credit field geology class at another institution. The geology and geophysics undergraduate advisor will assist students in placement in an approved field geology class.

Fulfills the baccalaureate capstone requirement.

GEOPHYSICS

Program Requirements

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<th>Course Name</th>
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<tr>
<td>GEOS F262</td>
<td>Rocks and Minerals</td>
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<td>GEOS F375</td>
<td>Oral Communication Skills for Geoscientists</td>
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<td>GEOS F406</td>
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<td>GEOS F477</td>
<td>Ice in the Climate System</td>
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<td>GEOS F483</td>
<td>Research Design, Writing and Presentation Methods</td>
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<td>PHYS F212X</td>
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<td>PHYS F213X</td>
<td>Elementary Modern Physics</td>
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<tr>
<td>PHYS F220</td>
<td>Introduction to Computational Physics</td>
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Select two of the following science and engineering electives or undergraduate advisor approved substitute:

- ES F331 Mechanics of Materials
- ES F341 Fluid Mechanics
- GEOS F314 Structural Geology
- GEOS F322 Stratigraphy and Sedimentation
- GEOS F422 Geoscience Applications of Remote Sensing
- ME F441 Heat and Mass Transfer
- PHYS F301 Introduction to Mathematical Physics
- PHYS F341 Classical Physics I: Particle Mechanics

Complete 6 additional credits of upper-division GEOS courses or other upper-division courses approved by the undergraduate advisor.

Total Credits 64-66

1. Fulfills the baccalaureate capstone requirement.