

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.

Code	Title	Credits
General University Requirements		
Complete the general university requirements. (http://catalog.uaf.edu/archives/2018-2019/bachelors)		
General Education Requirements		
Complete the general education requirements. (http://catalog.uaf.edu/archives/2018-2019/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/archives/2018-2019/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		
Complete one of the following concentrations:		62-73
Geology		
Paleontology		
Geospatial Sciences		
Geophysics		

General University Requirements

Complete the general university requirements. (<http://catalog.uaf.edu/archives/2018-2019/bachelors>)

General Education Requirements

Complete the general education requirements. (<http://catalog.uaf.edu/archives/2018-2019/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/archives/2018-2019/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

Complete one of the following concentrations: 62-73

Geology
Paleontology
Geospatial Sciences
Geophysics

Concentrations

GEOLOGY

Code	Title	Credits
Program Requirements		
Complete the following:		
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 F430	Statistics and Data Analysis in Geology	3
GEOS F454	Field Geology ^{1,2}	8
STAT F200X	Elementary Statistics	3
or STAT F300	Statistics	

Program Requirements

Complete the following:

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 F430	Statistics and Data Analysis in Geology	3
GEOS F454	Field Geology ^{1,2}	8
STAT F200X	Elementary Statistics	3
or STAT F300	Statistics	

Complete 12 additional credits of upper-division GEOS courses or other upper-division courses approved by the undergraduate advisor including one course from the following: 12

GEOS F317	Paleontological Research and Laboratory Methods
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GEOS F375	Oral Communication Skills for Geoscientists
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GEOG F420	Geopolitics of Energy
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GEOG F427	Polar Geography
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GEOG F483	Research Design, Writing and Presentation Methods
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GEOG F490	Geography Seminar
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GEOG F493	
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¹ GEOS F454 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

Code	Title	Credits
Program Requirements		
Complete the following:		
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 F454	Field Geology ^{1,2}	8
GEOS F430	Statistics and Data Analysis in Geology	3
STAT F200X	Elementary Statistics	3
or STAT F300	Statistics	
GEOS F315	Paleobiology and Paleontology	4
GEOS F317	Paleontological Research and Laboratory Methods	2
Complete 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

Complete the following:

CHEM F106X	General Chemistry II	4
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PHYS F103X	College Physics I	4
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GEOS F213	Mineralogy	4
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GEOS F214	Petrology and Petrography	4
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GEOS F225	Field and Computer Methods in Geology	2
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GEOS F314	Structural Geology	4
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GEOS F322	Stratigraphy and Sedimentation	4
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GEOS F454	Field Geology ^{1,2}	8
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GEOS F430	Statistics and Data Analysis in Geology	3
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STAT F200X	Elementary Statistics	3
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or STAT F300	Statistics	
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GEOS F315	Paleobiology and Paleontology	4
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GEOS F317	Paleontological Research and Laboratory Methods	2
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Complete at least two from the following electives: 5-7

GEOS F453	Palynology and Paleopalynology
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GEOS F485	Mass Extinctions, Neocatastrophism and the History of Life
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GEOS F486	Vertebrate Paleontology
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GEOS F488	Undergraduate Research
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Complete the requirements for a minor in biological sciences 20

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GEOSPATIAL SCIENCES

Code	Title	Credits
Program Requirements		
Complete the following:		
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/GEOG F222	Fundamentals of Geospatial Science ³	3
GEOS F225	Field and Computer Methods in Geology	2
GEOS F304	Geomorphology	3
GEOS F314	Structural Geology	4
GEOS F322	Stratigraphy and Sedimentation	4
GEOS F454	Field Geology ^{1,2}	8
GEOS F430	Statistics and Data Analysis in Geology	3
STAT F200X or STAT F300	Elementary Statistics Statistics	3
Electives		
<i>Remote sensing electives</i>		
Complete 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	
<i>GIS electives</i>		
Complete at least two of the following:		6-7
GEOG F309	Digital Cartography and Geovisualization	
GEOG 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:		9
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		
Complete one additional course from the following:		
GEOS F309	Tectonics	
GEOS F315	Paleobiology and Paleontology	

GEOS F483 Research Design, Writing and Presentation Methods

- ¹ GEOS F454 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.
- ³ Or equivalent course approved by undergraduate advisor.

GEOPHYSICS

Code	Title	Credits
Program Requirements		
Complete the following:		
GEOS F262	Rocks and Minerals	3
GEOS F375	Oral Communication Skills for Geoscientists	1
GEOS F406	Volcanology	3
GEOS F419	Solid Earth Geophysics	3
GEOS F431	Foundations of Geophysics	4
GEOS F477	Ice in the Climate System	3
GEOS F488	Undergraduate Research ¹	2
GEOG F483	Research Design, Writing and Presentation Methods	3
MATH F252X	Calculus II	4
MATH F253X	Calculus III	4
MATH F302	Differential Equations	3
MATH F314	Linear Algebra	3
PHYS F211X and PHYS F212X	General Physics I and General Physics II	8
PHYS F213X	Elementary Modern Physics	4
PHYS F220	Introduction to Computational Physics	4
Complete two of the following science and engineering electives or undergraduate advisor approved substitute:		6-8
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.

- ¹ Fulfills the baccalaureate capstone requirement.