

# GEOGRAPHY

College of Natural Science and Mathematics  
Department of Geosciences  
907-474-7565  
[www.uaf.edu/cnsm/](http://www.uaf.edu/cnsm/)

## B.A., B.S. Degrees

Minimum Requirements for Degrees: 120 credits

Geography is a broad, holistic study of the interactions among various natural/environmental, political, cultural and economic systems, and how those interactions create the world we see today at both local and global scales. Geography takes a synthesizing and inherently interdisciplinary approach to develop an integrated understanding of climate change, resource development, energy use and conservation, geopolitics, sustainable development, assessment of natural and human-caused environmental hazards, land-use change, regional conflicts, and economic and political developments all over the world. Geography also provides the framework for the integration of existing and emerging technologies such as GIS, remote sensing and geo-visualization into a broad range of academic and professional fields.

The geography B.A. and B.S. degrees are built upon a group of required courses that gives students a firm grounding in the fundamental components of the discipline, including global geographic perspectives, geography of the earth's natural systems, geography of human systems, geospatial sciences (GIS, remote sensing, geo-visualization), and the synthesis of these core perspectives through an integrating capstone experience.

Our students find work in such fields as mapping technology (GIS/cartography), regional planning, international relations, state and federal resource management, transportation planning, environmental impact assessment, tourism, and teaching. Many of our students go on to graduate study in geography, natural resources, environmental science or planning. The geography B.A. degree gives students a broad understanding of the interactions among the physical environments, economics, political events, and cultures of various regions of the world, and equips students with the ability to interpret contemporary geopolitical and environmental issues. The B.A. prepares students for careers in management, policy, teaching, field-based research, regional planning, and a variety of private sector careers. The B.A. also provides an excellent foundation for graduate studies in a wide range of academic disciplines.

B.A. students are encouraged to coordinate minors, electives and internships to develop further expertise within a chosen region or topic, to take advantage of the considerable topical and regional expertise found throughout the UAF community, and also to underscore the important role other disciplines play within the field of geography.

Three specialized concentrations are available to students pursuing the B.S. degree: environmental studies; landscape analysis and climate change studies; and geospatial sciences.

The environmental studies concentration provides the foundation for understanding interactions between natural and human systems, analysis of environmental issues from an interdisciplinary geographic perspective, a diverse technical and scientific approach to environmental issues, and the ability to design balanced solutions to environmental problems.

The landscape analysis and climate change studies concentration integrates and synthesizes courses in geography, climate, geologic and biological sciences, as well as geospatial sciences. Students gain a sound and interdisciplinary understanding of how environmental change influences landscape patterns and human activity and welfare on both spatial and temporal scales. Senior capstone and internship courses offer integrating capstone experiences, enabling students to apply what they have learned in real-world settings.

The geospatial sciences concentration emphasizes skills and practices in geographic information systems, remote sensing, geovisualization and analysis of spatial patterns. Courses in GIS, remote sensing, GPS, map design, spatial statistics and computer programming are integrated with the geography foundation curriculum and courses in the natural sciences.

## Major — B.A. Degree

1. Complete the general university requirements (page 166).
2. Complete the B.A. degree requirements (page 166).
3. As part of the baccalaureate core requirements, complete NRM F303X.\*
4. Complete the following:\*  
GEOG F101—Expedition Earth: Introduction to Geography .....3  
GEOG F111X—Earth and Environment: Elements of Physical Geography .....4  
GEOG F312—People, Places, and Environment: Principles of Human Geography.....3  
GEOG F490W,O—Geography Seminar.....3  
NRM F338—Introduction to Geographic Information Systems.....3
5. Complete the following program (major) requirements. Students will tailor their program through course selection from the categories below in consultation with their advisor to focus on a subspecialty in the circumpolar North and/or the Pacific Rim.\*
  - a. Regional geography: Complete two of the following:  
GEOG F302—Geography of Alaska .....3  
GEOG F303—Geography of United States and Canada.....3  
GEOG F305W—Geography of Europe .....3  
GEOG F306—Geography of Russia.....3  
GEOG F311W—Geography of Asia .....3  
GEOG F410—Geography of the Pacific Rim .....3  
GEOG F427—Polar Geography.....3
  - b. Physical geography: Complete one of the following:  
GEOG F307—Weather and Climate .....3  
GEOG F339—Maps and Landscape Analysis .....4  
GEOG F412—Geography of Climate and Environmental Change ..3  
GEOG F418—Biogeography .....3
  - c. Human geography: Complete one of the following:  
GEOG F405—Political Geography .....3  
GEOG F420—Geopolitics of Energy.....3  
NRM F403W/O—Environmental Decision Making.....3
  - d. Techniques: Complete one of the following:  
GEOG F309—Digital Cartography and Geo-Visualization .....4  
GEOG F430—Google Earth and Neogeography.....3  
GEOG F483W—Research Design, Writing, and Presentation Methods .....3  
GEOS F422—Geoscience Applications of Remote Sensing .....3  
GEOS F458—Geoscience Applications of GPS and GIS .....3  
NRM F366—Survey Research in Natural Resource Management ...3  
NRM F435—GIS Analysis .....4
  - e. Geography electives: Complete two courses from any of the above categories, or other courses appropriate to the student's chosen program of study. Both courses must be at F300 level or higher and approved by the student's advisor.
6. Minimum credits required .....120

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

Note: Geography majors are encouraged to reinforce their program focus with a minor in one of the following areas: Alaska Native Studies, Anthropology, Asian Studies, Economics, Environmental Politics, Foreign Languages, Geology, Geophysics, Global Studies, History, Journalism, Natural Resource Management, Northern Studies, Political Science, Rural Development, Russian Studies.

Note: Students and faculty advisors should carefully review prerequisites for courses outlined in each required and/or optional area. In some instances courses, either in geography or other fields, require successful completion of 1-3 prerequisite courses. Therefore, students and faculty should note minimum degree credit hours are 120, but the actual number of required course credits may exceed that number.

## Major — B.S. Degree

1. Complete the general university requirements (page 167).
2. Complete the B.S. degree requirements (page 167). As part of the B.S. degree requirements, complete MATH F232X or MATH F251X.\*
3. As part of the baccalaureate core requirements, complete NRM F303X; STAT F200X.\*
4. Complete the following:\*  
GEOG F101—Expedition Earth: Introduction to Geography .....3  
GEOG F111X—Earth and Environment: Elements of Physical Geography .....4  
GEOG F312—People, Places and Environment: Principles of Human Geography .....3  
GEOG F490W/O—Geography Seminar .....3  
NRM F338—Introduction to Geographic Information Systems .....3
5. Complete one of the following concentrations:\*

### Environmental Studies

- a. As part of the baccalaureate core requirements, complete CHEM F105X.\*
- b. As part of the B.S. degree requirements, complete BIOL F115X; BIOL F116X;
- c. Complete the following:  
GEOG F207—Research Methods and Statistics in Geography .....3  
GEOG F307—Weather and Climate .....3  
GEOG F339—Maps and Landscape Analysis .....4  
GEOG F483W—Research Design, Writing and Presentation Methods .....3
- d. Complete two courses from the following environmental studies electives:  
GEOG F412—Geography of Climate and Environmental Change ..3  
GEOG F488—Geographic Assessment and Prediction of Natural Hazards .....3  
NRM F403W/O—Environmental Decision Making.....3  
NRM F407—Environmental Law .....3
- e. Complete three courses from the following environmental system electives:  
ANTH F428—Ecological Anthropology and Regional Sustainability .....3  
BIOL F371—Principles of Ecology.....4  
BIOL/NRM F277—Introduction to Conservation Biology.....3  
GEOG F418—Biogeography .....3  
GEOS F304—Geomorphology .....3  
NRM F375—Natural Resource Ecology .....3  
NRM F380W—Soils and the Environment .....3
- f. Complete one of the following environmental management electives:  
NRM F365—Principles of Outdoor Recreation Management.....3  
NRM F370—Introduction to Watershed Management.....3  
NRM F430—Resource Management Planning.....3  
NRM F464—Wilderness Management .....3  
NRM F480—Soil Management for Quality and Conservation.....3
- g. Complete one of the following techniques electives:  
GEOG F309—Digital Cartography and Geo-Visualization .....4  
GEOS F422—Geoscience Applications of Remote Sensing .....3  
GEOS F458—Geoscience Applications of GPS and GIS .....3  
NRM F366—Survey Research in Natural Resource Management ...3  
GEOG F435—GIS Analysis .....4

## Landscape Analysis and Climate Change Studies

- a. As part of the baccalaureate core requirements, complete CHEM F105X\*.
- b. As part of the B.S. degree requirements, complete BIOL F115X; BIOL F116X.
- c. Complete the following processes requirements (geomorphology, climate, ecology, systems):  
BIOL F371—Principles of Ecology .....4  
GEOG F307—Weather and Climate .....3  
GEOG F412—Geography of Climate and Environmental Change .....3  
GEOG F418—Biogeography .....3  
GEOS F304—Geomorphology .....3
- d. Complete one of the following processes electives:  
NRM F370—Watershed Management.....3  
NRM F380W—Soils and the Environment .....3  
or a processes-oriented content course approved by a geography faculty advisor.
- e. Complete the following patterns requirements (field methods, GIS/remote sensing tools):  
GEOG F309—Digital Cartography and Geo-Visualization .....4  
GEOG F339—Maps and Landscape Analysis .....4  
NRM F435—GIS Analysis (4) .....3-4  
or GEOS F458—Geoscience Application GPS and GIS (3).....3-4
- f. Complete at least one of the following patterns electives:  
GE F471—Remote Sensing for Engineering.....3  
GEOS F422—Geoscience Applications of Remote Sensing .....3  
NRM F641—Remote Sensing Applications in Natural Resources....4
- g. Complete the following capstone requirement (program synthesis):  
GEOG F483W—Research Design, Writing, and Presentation Methods 3

### Geospatial Sciences

- a. Complete the following:  
CS F103—Introduction to Computer Programming.....3  
GEOG F300—Internship in Geography (in GIS) .....3  
GEOG F339—Maps and Landscape Analysis .....3-4  
NRM F435—GIS Analysis .....4
  - b. Complete at least two remote sensing electives:  
GE F471—Remote Sensing for Engineering.....3  
GEOS F422—Geoscience Applications of Remote Sensing .....3  
NRM F641—Remote Sensing Applications in Natural Resources....4
  - c. Complete at least two GIS electives:  
GE F376—GIS in Geological and Environmental Engineering .....3  
GEOG F309—Digital Cartography and Geo-Visualization .....4  
GEOS F458—Geoscience Applications of GPS and GIS .....3  
NRM F638—GIS Programming\*\* .....3
  - d. Complete at least two landscape electives:  
BIOL F469O—Landscape Ecology and Wildlife Habitat .....3  
GEOS F304—Geomorphology .....3  
GEOS F408—Photogeology .....2  
GEOS F430—Statistics and Data Analysis in Geology.....3
6. Minimum credits required .....120

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

\*\* Graduate level credit used to complete this undergraduate degree program may NOT be applied towards future graduate degree programs.

Note: Students and faculty advisors should carefully review prerequisites for courses outlined in each required and/or optional area. In some instances, courses, either in geography or other fields, require successful completion of from 1-3 prerequisite courses. Therefore, students and faculty should note minimum degree credit hours are 120, but the actual number of required course credits may exceed that number.

**Minor**

**Geography**

- 1. Complete the following:
    - GEOG F101—Expedition Earth: Introduction to Geography .....3
    - GEOG F111X—Earth and Environment: Elements of Physical Geography .....4
    - GEOG electives .....9
  - 2. Minimum credits required ..... 16
- \* *Students must earn a C grade or better in each course.*

**Geographic Information Systems**

- 1. Complete the following:\*
  - GEOG F111X—Earth and Environment: Elements of Physical Geography .....4
  - GEOG F309—Digital Cartography and Geo-Visualization .....4
  - GEOG F458—Geoscience Applications of GPS and GIS .....3
  - NRM F338—Introduction to Geographic Information Systems .....3
  - 2. Complete one of the following:\*
  - GEOG F300—Internship in Geography (in GIS) (3) or any GIS-related course approved by advisor (3) .....3
  - GEOG F430—Google Earth and Neogeography .....3
  - NRM F369—GIS and Remote Sensing for Natural Resources .....3
  - NRM F435—GIS Analysis .....4
  - 3. Minimum credits required ..... 17
- \* *Students must earn a C grade or better in each course.*



# Baccalaureate Core Requirements

## Communication . . . . . 9 Credits

- ENGL F111X—Introduction to Academic Writing.....(3)

Complete one of the following:

- ENGL F211X—Academic Writing about Literature.....(3)
- ENGL F213X—Academic Writing about the Social and Natural Sciences.....(3)

Complete one of the following:

- COMM F121X—Introduction to Interpersonal Communication.....(3)
- COMM F131X—Fundamentals of Oral Communication: Group Context.....(3)
- COMM F141X—Fundamentals of Oral Communication: Public Context.....(3)

## Perspectives on the Human Condition . . . . . 18 Credits

Complete all of the following four courses:

- ANTH F100X/SOC F100X—Individual, Society and Culture.....(3)
- ECON F100X or PS F100X—Political Economy.....(3)
- HIST F100X—Modern World History.....(3)
- ENGL/FL F200X—World Literature.....(3)

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Complete one of the following three courses:

- ART/MUS/THR F200X—Aesthetic Appreciation: Interrelationship of Art, Drama and Music.....(3)
- HUM F201X—Unity in the Arts.....(3)
- ANS F202X—Aesthetic Appreciation of Alaska Native Performance.....(3)

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Complete one of the following six courses:

- BA F323X—Business Ethics.....(3)
- COMM F300X—Communicating Ethics.....(3)
- JUST F300X—Ethics and Justice.....(3)
- NRM F303X—Environmental Ethics and Actions.....(3)
- PS F300X—Ethics and Society.....(3)
- PHIL F322X—Ethics.....(3)

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Or complete 12 credits from the above courses plus one of the following:

- Two semester-length courses in a single Alaska Native language or other non-English language
- Three semester-length courses (9 credits) in American Sign Language taken at the university level.

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## Mathematics . . . . . 3 Credits

Complete one of the following:

- MATH F113X—Concepts and Contemporary Applications of Mathematics.....(3)
- MATH F151X—College Algebra for Calculus\*.....(4)
- MATH F152X—Trigonometry.....(4)
- MATH F156X—Precalculus.....(4)
- MATH F122X—Algebra for Business and Economics\*\*.....(3)
- STAT F200X—Elementary Probability and Statistics.....(3)

\* No credit may be earned for more than one of MATH F151X or F122X.

Or complete one of the following\*:

- MATH F251X—Calculus I\*\*.....(4)
- MATH F252X—Calculus II.....(4)
- MATH F253X—Calculus III.....(4)
- MATH F222X—Calculus for Business and Economics.....(4)
- MATH F232X—Calculus for Life Sciences.....(4)

\* Or any math course having one of these as a prerequisite

\*\* No credit may be earned for more than one of MATH F251X, F222X or F232X.

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## Natural Sciences . . . . . 8 Credits

Complete any two (4-credit) courses.

- ATM F101X—Weather and Climate of Alaska.....(4)
- BIOL F100X—Human Biology.....(4)
- BIOL F101X—Introduction to Animal Behavior.....(4)
- BIOL F103X—Biology and Society.....(4)
- BIOL F104X—Natural History.....(4)
- BIOL F115X—Fundamentals of Biology I.....(4)
- BIOL F116X—Fundamentals of Biology II.....(4)
- BIOL F120X—Introduction to Human Nutrition.....(4)
- BIOL F213X—Human Anatomy and Physiology I.....(4)
- BIOL F214X—Human Anatomy and Physiology II.....(4)
- CHEM F100X—Chemistry in Complex Systems.....(4)
- CHEM F103X—Basic General Chemistry.....(4)
- CHEM F104X—Beginnings in Biochemistry.....(4)
- CHEM F105X—General Chemistry.....(4)
- CHEM F106X—General Chemistry.....(4)
- GEOG F111X—Earth and Environment: Elements of Physical Geography.....(4)
- GEOS F100X—Introduction to Earth Science.....(4)
- GEOS F101X—The Dynamic Earth.....(4)
- GEOS F106X—Life and the Age of Dinosaurs.....(4)
- GEOS F112X—History of Earth and Life.....(4)
- GEOS F120X—Glaciers, Earthquakes and Volcanoes.....(4)
- GEOS F125X—Humans, Earth and Environment.....(4)
- MSL F111X—The Oceans.....(4)
- PHYS F102X—Energy and Society.....(4)
- PHYS F103X—College Physics.....(4)
- PHYS F104X—College Physics.....(4)
- PHYS F115X—Physical Science I.....(4)
- PHYS F175X—Astronomy.....(4)
- PHYS F211X—General Physics.....(4)
- PHYS F212X—General Physics.....(4)
- PHYS F213X—Elementary Modern Physics.....(4)

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## Library and Information Research . . . . . 0-1 Credit

- Successful completion of library skills competency test or LS F100X or LS F101X prior to junior standing

0-1

## Upper-Division Writing and Oral Communication

Complete the following at the upper-division level:

- Two writing intensive courses designated (W) and one oral communication intensive course designated (O), or two oral communication intensive courses designated (O/2) (see degree and/or major requirements)

Total credits required 38-39

All degrees (e.g. B.A., B.S., etc.) require additional courses.

Refer to specific degree and program requirements.

Students must earn a C- grade or better in each course used toward the baccalaureate core.

