

**FORMAT 5**

**Submit originals and one copy and electronic copy to Governance/Faculty Senate Office  
(email electronic copy to [jbharvie@alaska.edu](mailto:jbharvie@alaska.edu))**

<b>PROGRAM/DEGREE REQUIREMENT CHANGE (MAJOR)</b>
--

**SUBMITTED BY:**

<b>Department</b>	GEOG	<b>College/School</b>	SNRAS
<b>Prepared by</b>	Cary de Wit	<b>Phone</b>	X7141
<b>Email Contact</b>	<a href="mailto:cwdewit@alaska.edu">cwdewit@alaska.edu</a>	<b>Faculty Contact</b>	Cary de Wit

See <http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures/> for a complete description of the rules governing curriculum & course changes.

**PROGRAM IDENTIFICATION:**

<b>DEGREE PROGRAM</b>	Geography
<b>Degree Level: (i.e., Certificate, A.A., A.A.S., B.A., B.S., M.A., M.S., Ph.D.)</b>	BA & BS

**A. CHANGE IN DEGREE REQUIREMENTS: (Brief statement of program/degree changes and objectives)**

The changes to the Geography BA and BS programs mostly involve additions and removals of restricted electives. There are also some minor editorial changes to clarify the description of the program and to correct some errors.

These changes serve multiple purposes:

1. To update the selection of restricted electives based on the availability of new courses, and the deletion of some courses.
2. To update the BS concentrations to reflect changes in course availability, as well as changes in the job market and workplace requirements in environmental-related fields.
3. To more closely coordinate the Geography degrees with the NRM BS degree, and to make adjustments based on the pending revisions to the NRM BS degree.

**B. CURRENT REQUIREMENTS AS IT APPEARS IN THE CATALOG:**

## Geography

School of Natural Resources and Agricultural Sciences  
 UA Geography Program  
 907-474-7188  
[www.uagp.uaf.edu](http://www.uagp.uaf.edu)

### BA, BS DEGREES; MINOR

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 emerging technologies such as GIS, remote sensing and geo-visualization into a broad range of academic and professional fields.

The geography BA and BS degrees are built upon a group of required courses that provide students with 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.

The geography BA degree provides broad cultural training and background in the liberal arts with an emphasis on the circumpolar North and Pacific Rim. The BA prepares students for careers in management, policy, teaching, field-based research, regional planning, and private sector careers. The BA also provides an excellent foundation for advanced studies in a wide range of academic disciplines.

BA students are encouraged to coordinate minors, electives, and internships to develop further expertise within a chosen region or topic (see #4, below), 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 BS degree; environmental studies; landscape analysis and climate change studies; and geospatial sciences.

The environmental studies concentration provides the foundation necessary 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 and technology. Students will gain a sound and interdisciplinary understanding of how environmental change influences landscape patterns and human activity and welfare, on both spatial (e.g. latitude, altitude) and temporal (e.g. past, future) scales. Senior practicum courses serve as 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, geo-visualization 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 natural sciences.

## Major -- BA Degree

1. Complete the general university requirements.
2. Complete the BA degree requirements.
3. Complete the following:\*
  - GEOG F101--Expedition Earth: Introduction to Geography--3 credits
  - GEOG F111X--Earth and Environment: Elements of Physical Geography--4 credits
  - GEOG F312--People, Places, and Environment: Principles of Human Geography--3 credits
  - GEOG F338--Introduction to Geographic Information Systems (3)
    - or GEOG F435--GIS Analysis (4)--3 - 4 credits
  - GEOG F490W,O--Geography Seminar--3 credits
4. 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 credits
    - GEOG F303--Geography of United States and Canada--3 credits
    - GEOG F305W--Geography of Europe--3 credits
    - GEOG F306--Geography of Russia--3 credits
    - GEOG F311W--Geography of Asia--3 credits
    - GEOG F410--Geography of the Pacific Rim--3 credits
    - GEOG F427--Polar Geography--3 credits
  - b. Physical geography: Complete one of the following:

GEOG F307--Weather and Climate--3 credits  
GEOG F339--Maps and Landscape Analysis--3 credits  
GEOG F412--Geography of Climate and Environmental Change--3 credits  
GEOG F418--Biogeography--3 credits

c. Human geography: Complete one of the following:

GEOG F203--World Economic Geography--3 credits  
GEOG F402--Resources and Environment--3 credits  
GEOG F404--Urban Geography--3 credits  
GEOG F405--Political Geography--3 credits

d. Techniques: Complete one of the following:

GEOG F301--Geographic Field Studies--3 credits  
GEOG F309--Digital Cartography and Geo-Visualization--4 credits  
GEOG F458--Geoscience Applications of GPS and GIS--3 credits

e. Electives: Complete two courses (six credits) 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.

5. Complete approved electives open

6. Minimum credits required--120 credits

*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 -- BS Degree

1. Complete the general university requirements.

2. Complete the BS degree requirements. See individual BS concentrations for specific course requirements.

3. Complete the following:\*

GEOG F101--Expedition Earth: Introduction to Geography--3 credits  
GEOG F111X--Earth and Environment: Elements of Physical Geography--4 credits  
GEOG F338--Introduction to Geographic Information Systems (3)  
or GEOG F435--GIS Analysis (4)--3 - 4 credits

4. Complete one of the following concentrations:\*

### Environmental Studies

a. Complete the following:

GEOG F207--Research Methods and Statistics in Geography--3 credits  
GEOG F307--Weather and Climate--3 credits  
GEOG F312--People, Places, and Environment: Principles of Human Geography--3 credits  
GEOG F339--Maps and Landscape Analysis--3 credits  
GEOG F402--Resources and Environment--3 credits  
GEOG F490W,O--Geography Seminar--3 credits

b. Complete two courses from the following environmental studies electives:

GEOG F463--Wilderness Concepts--3 credits  
NRM F303X--Environmental Ethics and Actions\*\*--3 credits  
NRM F407--Environmental Law--3 credits

- c. Complete three courses from the following environmental system electives:  
ANTH F428--Ecological Anthropology and Regional Sustainability--3 credits  
BIOL F371--Principles of Ecology--4 credits  
BIOL/NRM F277--Introduction to Conservation Biology--3 credits  
GEOS F304--Geomorphology--3 credits  
NRM F375--Forest Ecology--3 credits  
NRM F380W--Soils and the Environment--3 credits
- d. Complete one of the following environmental management electives:  
FISH F487W,O--Fisheries Management--3 credits  
NRM F365--Principles of Outdoor Recreation Management--3 credits  
NRM F430--Resource Management Planning--3 credits  
NRM F450--Forest Management--3 credits  
NRM F480--Soil Management for Quality and Conservation--3 credits
- e. Complete one of the following techniques electives:  
GEOG F301--Geographic Field Studies--3 credits  
GEOG F309--Digital Cartography and Geo-Visualization--4 credits  
GEOG F435--GIS Analysis (can fulfill techniques requirement ONLY if not used in section #3 above)--4 credits  
GEOS F458--Geoscience Applications of GPS and GIS--3 credits

#### Landscape Analysis and Climate Change Studies

- a. As part of the baccalaureate core requirements, complete CHEM F105X and STAT F200X.
- b. As part of the BS degree requirements, complete BIOL F115X and BIOL F116X.
- c. Complete the following:  
GEOG F312--People, Places, and Environment: Principles of Human Geography--3 credits  
GEOG F490W,O--Geography Seminar--3 credits
- d. Complete one of the following processes requirements (geomorphology, climate, ecology, systems):  
GEOG F307--Weather and Climate --3 credits  
GEOG F412--Geography of Climate and Environmental Change--3 credits  
GEOG F418--Biogeography--3 credits  
BIOL F371--Principles of Ecology--4 credits  
GEOS F304--Geomorphology--3 credits
- e. Complete one of the following processes electives:  
NRM F370--Watershed Management--3 credits  
NRM F380W--Soils and the Environment--3 credits  
or a processes-oriented content course approved by a geography faculty advisor.
- f. Complete the following patterns requirements (field methods, GIS/remote sensing tools):  
GEOG F222 Fundamentals of Geospatial Sciences--3 credits  
GEOG F309--Digital Cartography and Geo-Visualization--4 credits  
GEOG F339--Maps and Landscape Analysis--3 credits  
GEOG F435--GIS Analysis (4) (can fulfill patterns requirement only if NOT used in section #3 above) or GEOS F458--Geoscience Application GPS and GIS (3)--3 - 4 credits
- g. Complete at least one of the following patterns electives:

GE F471--Remote Sensing for Engineering--3 credits  
GEOS F422--Geoscience Applications of Remote Sensing--3 credits  
NRM F641--Remote Sensing Applications in Natural Resources--4 credits

- h. Complete the following senior practicum requirements (program synthesis):  
GEOG F488--Geographic Assessment and Prediction of Natural Hazards--3 credits  
GEOG F489W--Senior Practicum: Research Design and Presentation Methods--4 credits

### Geospatial Sciences

- a. Complete the following:  
GEOG F312--People, Places, and the Environment: Principles of Human Geography--3 credits  
GEOG F490W,O--Geography Seminar--3 credits
- b. Complete the following:  
CS F103--Introduction to Computer Programming--3 credits  
GEOG F222--Fundamentals of Geospatial Sciences--3 credits  
GEOG F300--Internship in Natural Resources Management and Geography--3 credits  
GEOG F338--Introduction to Geographic Information Systems--3 credits  
GEOG F339--Maps and Landscape Analysis--3 - 4 credits  
GEOG F435--GIS Analysis--4 credits  
STAT F200X--Elementary Probability and Statistics--3 credits
- c. Complete at least two remote sensing electives:  
GE F471--Remote Sensing for Engineering--3 credits  
GEOS F422--Geoscience Applications of Remote Sensing--3 credits  
NRM F641--Remote Sensing Applications in Natural Resources--4 credits
- d. Complete at least two GIS electives:  
GE F376--GIS in Geological and Environmental Engineering--3 credits  
GEOG F309--Digital Cartography and Geo-Visualization--4 credits  
GEOS F458--Geoscience Applications of GPS and GIS--3 credits  
NRM F638--GIS Programming\*\*\*--3 credits
- e. Complete at least two landscape electives:  
BIOL F4690--Landscape Ecology and Wildlife Habitat--3 credits  
GEOS F304--Geomorphology--3 credits  
GEOS F408--Photogeology--2 credits  
GEOS F430--Statistics and Data Analysis in Geology--3 credits

5. Minimum credits required--120 credits

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

\*\* If used to fulfill core requirements, NRM F303X may not also count towards geography major.

\*\*\* 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 credits

GEOG F111X--Earth and Environment: Elements of Physical Geography--4 credits  
GEOG electives--8 - 9 credits

2. Minimum credits required--15 - 16 credits

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

## Geographic Information Systems

1. Complete the following:\*

GEOG F111X--Earth and Environment: Introduction to Physical Geography--4 credits

GEOG/GEOS F222--Fundamentals of Geospatial Sciences--3 credits

GEOG F309--Digital Cartography and Geo-visualization--4 credits

GEOG F338--Introduction to Geographic Information Systems--3 credits

2. Complete one of the following:\*

GEOG F300--Internship in Geography - in GIS (3)

or any GIS-related course approved by geography department chair--3 credits

GEOG F435--GIS Analysis--4 credits

GEOG F430--Google Earth and Neogeography--3 credits

NRM F369--GIS and Remote Sensing for Natural Resources--3 credits

3. Minimum credits required--17 credits

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

### ***C. PROPOSED REQUIREMENTS AS IT WILL APPEAR IN THE CATALOG WITH THESE CHANGES: (Underline new wording strike through old wording and use complete catalog format )***

## Geography

School of Natural Resources and Agricultural Sciences

UA Geography Program

907-474-7188

www.uagp.uaf.edu

### **BA, BS DEGREES; MINOR**

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 BA and BS degrees are built upon a group of required courses that ~~provide~~ gives students ~~with~~ 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 BA degree provides broad cultural training and background in the liberal arts with an emphasis on the circumpolar North and Pacific Rim. The BA prepares students for careers in management, policy, teaching, field-based research, regional planning, and private sector careers.~~

The BA also provides an excellent foundation for advanced studies in a wide range of academic disciplines. The geography BA 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 BA 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.

BA students are encouraged to coordinate minors, electives, and internships to develop further expertise within a chosen region or topic (see #4, below), 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 BS degree; environmental studies; landscape analysis and climate change studies; and geospatial sciences.

The environmental studies concentration provides the foundation necessary 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 ~~and technology~~. Students will gain a sound and interdisciplinary understanding of how environmental change influences landscape patterns and human activity and welfare, on both spatial (e.g. latitude, altitude) and temporal (e.g. past, future) scales. Senior capstone and internship practicum courses ~~serve as~~ offer integrating 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, geo-visualization 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 -- BA Degree

1. Complete the general university requirements.
2. Complete the BA degree requirements.
3. As part of the baccalaureate core requirements, complete NRM 303X.\*

### 4. Complete the following:\*

- GEOG F101--Expedition Earth: Introduction to Geography--3 credits
- GEOG F111X--Earth and Environment: Elements of Physical Geography--4 credits
- GEOG F312--People, Places, and Environment: Principles of Human Geography--3 credits
- GEOG F338--Introduction to Geographic Information Systems--3 credits (~~3~~)  
or GEOG F435--GIS Analysis (4) ~~3~~ 4 credits
- GEOG F490W,O--Geography Seminar--3 credits

4. 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 credits
  - GEOG F303--Geography of United States and Canada--3 credits
  - GEOG F305W--Geography of Europe--3 credits
  - GEOG F306--Geography of Russia--3 credits
  - GEOG F311W--Geography of Asia--3 credits
  - GEOG F410--Geography of the Pacific Rim--3 credits
  - GEOG F427--Polar Geography--3 credits

- b. Physical geography: Complete one of the following:  
 GEOG F307--Weather and Climate--3 credits  
 GEOG F339--Maps and Landscape Analysis--~~3~~ 4 credits  
 GEOG F412--Geography of Climate and Environmental Change--3 credits  
 GEOG F418--Biogeography--3 credits
- c. Human geography: Complete one of the following:  
~~GEOG F203--World Economic Geography--3 credits~~  
 GEOG F402--Resources and Environment--3 credits  
 GEOG F404--Urban Geography--3 credits  
 GEOG F405--Political Geography--3 credits  
GEOG F420--Geopolitics of Energy--3  
NRM F403W/O--Environmental Decision Making--3 credits
- d. Techniques: Complete one of the following:  
~~GEOG F301--Geographic Field Studies--3 credits~~  
 GEOG F309--Digital Cartography and Geo-Visualization--4 credits  
GEOG F430--Google Earth and Neogeography--3 credits  
GEOG F435--GIS Analysis--4 credits  
GEOG F483W-- Research Design, Writing, and Presentation Methods--3  
GEOS F422-- Geoscience Applications of Remote Sensing--3 credits  
GEOS F458--Geoscience Applications of GPS and GIS--3 credits  
NRM F366--Survey Research in Natural Resource Management--3 credits
- e. Geography Electives~~electives~~: Complete two courses (~~six credits~~) 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.

~~5. Complete approved electives open~~

6. Minimum credits required--120 credits

\* 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 -- BS Degree

1. Complete the general university requirements.
2. Complete the BS degree requirements. See individual BS concentrations for specific course requirements.
3. As part of the baccalaureate core requirements, complete NRM 303X.\*
- ~~3~~4. Complete the following:\*  
 GEOG F101--Expedition Earth: Introduction to Geography--3 credits  
 GEOG F111X--Earth and Environment: Elements of Physical Geography--4 credits  
 GEOG F312--People, Places, and the Environment: Principles of Human Geography--3 credits



~~GEOG F338--Introduction to Geographic Information Systems--3 credits (3)~~  
~~or GEOG F435--GIS Analysis (4)--3--4 credits~~  
GEOG F490W,O--Geography Seminar--3 credits

45. Complete one of the following concentrations:\*

**Environmental Studies**

a. As part of the baccalaureate core requirements, complete CHEM F105X.

b. As part of the BS degree requirements, complete BIOL F115X and BIOL F116X.

ac. Complete the following:

GEOG F207--Research Methods and Statistics in Geography--3 credits

GEOG F307--Weather and Climate--3 credits

~~GEOG F312--People, Places, and Environment: Principles of Human Geography--3 credits~~

GEOG F339--Maps and Landscape Analysis--3 4 credits

GEOG F402--Resources and Environment--3 credits

~~GEOG F490W,O--Geography Seminar--3 credits~~

bd. Complete two courses from the following environmental studies electives:

GEOG F412--Geography of Climate and Environmental Change--3 credits

GEOG F463--Wilderness Concepts--3 credits

GEOG F488--Geographic Assessment and Prediction of Natural Hazards--3 credits

~~NRM F303X--Environmental Ethics and Actions\*\*--3 credits~~

NRM F403W/O--Environmental Decision Making--3 credits

NRM F407--Environmental Law--3 credits

ee. Complete three courses from the following environmental system electives:

ANTH F428--Ecological Anthropology and Regional Sustainability--3 credits

BIOL F371--Principles of Ecology--4 credits

BIOL/NRM F277--Introduction to Conservation Biology--3 credits

GEOG F418--Biogeography--3 credits

GEOS F304--Geomorphology--3 credits

NRM F375-- Natural Resource Ecology--3 credits

~~NRM F375--Forest Ecology--3 credits~~

NRM F380W--Soils and the Environment--3 credits

ef. Complete one of the following environmental management electives:

~~FISH F487W,O--Fisheries Management--3 credits~~

NRM F365--Principles of Outdoor Recreation Management--3 credits

NRM 370--Introduction to Watershed Management--3 credits

NRM F430--Resource Management Planning--3 credits

~~NRM F450--Forest Management--3 credits~~

NRM F464--Wilderness Management --3 credits

NRM F480--Soil Management for Quality and Conservation--3 credits

eg. Complete one of the following techniques electives:

~~GEOG F301--Geographic Field Studies--3 credits~~

GEOG F309--Digital Cartography and Geo-Visualization--4 credits

GEOG F435--GIS Analysis (can fulfill techniques requirement ONLY if not used in section #3 above)--4 credits

GEOS F422-- Geoscience Applications of Remote Sensing--3 credits

GEOS F458--Geoscience Applications of GPS and GIS--3 credits

NRM F366--Survey Research in Natural Resource Management--3 credits

GEOG F483W-- Research Design, Writing, and Presentation Methods--3 credits

## Landscape Analysis and Climate Change Studies

- a. As part of the baccalaureate core requirements, complete CHEM F105X and STAT F200X.
- b. As part of the BS degree requirements, complete BIOL F115X and BIOL F116X.

### ~~e. Complete the following:~~

~~GEOG F312--People, Places, and Environment: Principles of Human Geography--3 credits~~

~~GEOG F490W,O--Geography Seminar--3 credits~~

- ~~ec. Complete one of the following processes requirements (geomorphology, climate, ecology, systems):~~

~~GEOG F307--Weather and Climate--3 credits~~

~~GEOG F412--Geography of Climate and Environmental Change--3 credits~~

~~GEOG F418--Biogeography--3 credits~~

~~BIOL F371--Principles of Ecology--4 credits~~

~~GEOS F304--Geomorphology--3 credits~~

- ~~ed. Complete one of the following processes electives:~~

~~NRM F370--Watershed Management--3 credits~~

~~NRM F380W--Soils and the Environment--3 credits~~

~~or a processes-oriented content course approved by a geography faculty advisor.~~

- ~~fe. Complete the following patterns requirements (field methods, GIS/remote sensing tools):~~

~~GEOG F222 Fundamentals of Geospatial Sciences--3 credits~~

~~GEOG F309--Digital Cartography and Geo-Visualization--4 credits~~

~~GEOG F339--Maps and Landscape Analysis--3-4 credits~~

~~GEOG F435--GIS Analysis (4) (can fulfill patterns requirement only if NOT used in section #3 above) or GEOS F458--Geoscience Application GPS and GIS (3)--3 - 4 credits~~

- ~~gf. Complete at least one of the following patterns electives:~~

~~GE F471--Remote Sensing for Engineering--3 credits~~

~~GEOS F422--Geoscience Applications of Remote Sensing--3 credits~~

~~NRM F641--Remote Sensing Applications in Natural Resources--4 credits~~

- ~~hg. Complete the following senior-practicum/capstone requirements (program synthesis):~~

~~GEOG F488--Geographic Assessment and Prediction of Natural Hazards--3 credits~~

~~GEOG F489W--Senior Practicum: Research Design and Presentation Methods--4 credits~~

~~GEOG F483W-- Research Design, Writing, and Presentation Methods--3 credits~~

## Geospatial Sciences

### ~~a. Complete the following:~~

~~GEOG F312--People, Places, and the Environment: Principles of Human Geography--3 credits~~

~~GEOG F490W,O--Geography Seminar--3 credits~~

- ~~ba. Complete the following:~~

~~CS F103--Introduction to Computer Programming--3 credits~~

~~GEOG F222--Fundamentals of Geospatial Sciences--3 credits~~

~~GEOG F300--Internship in Natural Resources Management and Geography (in GIS)--3 credits~~

~~GEOG F338--Introduction to Geographic Information Systems--3 credits~~

~~GEOG F339--Maps and Landscape Analysis--3-4 credits~~

~~GEOG F435--GIS Analysis--4 credits~~

~~STAT F200X--Elementary Probability and Statistics--3 credits~~

- ~~eb. Complete at least two remote sensing electives:~~

~~GE F471--Remote Sensing for Engineering--3 credits~~

GEOS F422--Geoscience Applications of Remote Sensing--3 credits  
NRM F641--Remote Sensing Applications in Natural Resources--4 credits

ed. Complete at least two GIS electives:

GE F376--GIS in Geological and Environmental Engineering--3 credits  
GEOG F309--Digital Cartography and Geo-Visualization--4 credits  
GEOS F458--Geoscience Applications of GPS and GIS--3 credits  
NRM F638--GIS Programming\*\*\*--3 credits

ed. Complete at least two landscape electives:

BIOL F4690--Landscape Ecology and Wildlife Habitat--3 credits  
GEOS F304--Geomorphology--3 credits  
GEOS F408--Photogeology--2 credits  
GEOS F430--Statistics and Data Analysis in Geology--3 credits

56. Minimum credits required--120 credits

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

~~\*\* If used to fulfill core requirements, NRM F303X may not also count towards geography major.~~

~~\*\*\* \*\* 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 credits  
GEOG F111X--Earth and Environment: Elements of Physical Geography--4 credits  
GEOG electives--8—9 credits

2. Minimum credits required--15—16 credits

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

### Geographic Information Systems

1. Complete the following:\*

GEOG F111X--Earth and Environment: Introduction to Physical Geography--4 credits  
~~GEOG/GEOS F222--Fundamentals of Geospatial Sciences--3 credits~~  
GEOG F309--Digital Cartography and Geo-visualization--4 credits  
GEOG F338--Introduction to Geographic Information Systems--3 credits  
GEOS F458--Geoscience Applications of GPS and GIS--3 credits

2. Complete one of the following:\*

GEOG F300--Internship in Geography (in GIS) --in GIS--3 credits  
or any GIS-related course approved by geography department chair--3 credits  
GEOG F435--GIS Analysis--4 credits  
GEOG F430--Google Earth and Neogeography--3 credits  
NRM F369--GIS and Remote Sensing for Natural Resources--3 credits

3. Minimum credits required--17 credits

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

--

**D. ESTIMATED IMPACT**

<b>WHAT IMPACT, IF ANY, WILL THIS HAVE ON BUDGET, FACILITIES/SPACE, FACULTY, ETC.</b>
No significant impact. Will use existing faculty, space, and curriculum resources.

**E. IMPACTS ON PROGRAMS/DEPTS:**

<b>What programs/departments will be affected by this proposed action? Include information on the Programs/Departments contacted (e.g., email, memo)</b>
These changes may impact enrollments in some courses in the NRM department, and incorporate some new courses being proposed in the NRM program. The Geography and NRM Departments have been closely collaborating on all these changes, and so are in agreement about them.
Most of the other curriculum changes involve GEOS courses that many geography students already take, so there should be no significant impact on the GEOS enrollments.

**F. IF MAJOR CHANGE - ASSESSMENT OF THE PROGRAM:**

<b>Description of the student learning outcomes assessment process.)</b>
Geography SLOA consists of assembling a concise portfolio of student work and evaluations of that work. Written work and records of oral presentations are systematically collected from specific required courses as each geography major progresses through his/her program. Each student's early work from introductory courses is compared to work produced in senior capstone courses, and a faculty committee produces an evaluation of improvement in writing, presentation, and critical thinking skills for each student. These evaluations are then compiled in aggregate form to give a general representation of measurable improvement in these skills for a given cohort of graduating students. These aggregate measures will be compared from year to year to assess whether the entire degree program is producing an increase, decrease, or steady state in student learning over time.

**JUSTIFICATION FOR ACTION REQUESTED**

**The purpose of the department and campus-wide curriculum committees is to scrutinize program/degree change applications to make sure that the quality of UAF education is not lowered as a result of the proposed change. Please address this in your response. This section needs to be self-explanatory. If you drop a course, is it because the material is covered elsewhere? Use as much space as needed to fully justify the proposed change and explain what has been done to ensure that the quality of the program is not compromised as a result.**

<p>The major changes proposed here are to the selection of restricted electives in several sections of both the Geography BA and BS. Electives have been removed because they either are no longer offered consistently enough to practically use them as requirements, or because the job market and workplace requirements in environmental-related fields have changed enough to warrant an adjustment to the set of skills we offer our students.</p> <p>Electives have been added to increase the flexibility in the degrees, to take advantage of new relevant courses that have appeared at UAF, and again, to give students (especially in the BS concentrations) better preparation for the changing requirements of the job market.</p> <p>Several changes that might appear to be removed requirements are actually just editorial rearrangements to make the degrees easier to understand. For instance, GEOG F312--People, Places, and Environment, and GEOG F490W,O--Geography Seminar, have been listed separately under each BS concentration. We have moved them to the general Geography BS requirements to avoid the repetition.</p> <p>The number and title of GEOG 489W--Senior Practicum, has been changed to GEOG F483W-- Research Design, Writing, and Presentation Methods, to accommodate cross-listing with NRM. The intent and structure of that course for Geography majors has not changed.</p> <p>GEOG F488--Geographic Assessment and Prediction of Natural Hazards has been removed from the "senior practicum requirements" in the Landscape Analysis and Climate Change concentration because those students already take GEOG 489W (Now GEOG 483W) and GEOG 490W,O as "capstone" courses, and we've found that requiring GEOG 488 is capstone overload for the students.</p> <p>We have added NRM F366--Survey Research in Natural Resource Management, and GEOG F483W-- Research Design, Writing, and Presentation Methods, as "Techniques" electives under the BA and the Environmental Studies concentration in the BS to broaden students' ability to develop social science research skills as well as technical skills.</p>
---

We have required NRM 303x Environmental Ethics and Actions, as part of the baccalaureate core in the BA and BS because this is a course that is very relevant to geography majors, and allowing them to take it as part of the core keeps the burden of degree requirements down.

We have required BIOL 115x and 116x as part of the BS requirements in the BS Environmental Studies concentration because these courses are prerequisites for several of the restricted electives in this concentration, and allowing them to take it as part of their BS requirements keeps the burden of degree requirements down.

**APPROVALS: Add signature blocks as necessary (e.g., cross listing approvals)**

	Date	
Signature, Chair, Program/Department of:	<u>Geography</u>	

	Date	
Signature, Chair, College/School Curriculum Council for:	<u>School of Natural Resources &amp; Agricultural Sci</u>	

	Date	
Signature, Dean, College/School of:	<u>School of Natural Resources &amp; Agricultural Sci</u>	

**ALL SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION TO THE GOVERNANCE OFFICE**

	Date	
Signature, Chair, UAF Faculty Senate Curriculum Review Committee		