GEOGRAPHY (GEOG)

GEOG F101X  Expedition Earth: Introduction to Geography  (s)  
3 Credits  
Offered Fall, Spring and Summer  
Introduction to essential concepts and approaches of geographic study. Explores physical, political, economic and cultural geography of major world culture regions. Examines each region in relation to others, and in context of global economic, political and environmental change. 
Attributes: UAF GER Social Sciences Req  
Lecture + Lab + Other: 3 + 0 + 0  
GEOG F111X  Earth and Environment: Elements of Physical Geography  (n)  
4 Credits  
Offered Fall  
This course explores the processes that create and shape Earth's physical environment. A global systems approach will be used to describe elements of, and interactions between, the atmosphere, hydrosphere, lithosphere and biosphere. A review and application of modern mapping techniques including GIS and GPS will be covered. The topic of global change serves as a capstone topic that integrates course concepts allowing for a comprehensive understanding of Earth surface processes. Lab section includes hands-on activities to reinforce lecture material and three field trips. Special lab fees apply.  
Prerequisites: Placement in WRTG F111X; placement in MATH F105.  
Attributes: UAF GER Natural Science Req  
Lecture + Lab + Other: 3 + 0 + 0  
GEOG F202  Natural Disasters  
3 Credits  
Offered As Demand Warrants  
Natural disasters are usually the result of the build up and sudden release of energy in the solid earth, atmosphere, or biosphere. Natural 'events' typically become disasters when intensive human activity alters the energy dynamics involved, or when the event endangers human life, property, or livelihood. This course examines the natural physical processes that affect the human environment in catastrophic ways. Case studies from around the world, will allow the examination of the complex factors that lead to natural disasters.  
Prerequisites: WRTG F111X.  
Lecture + Lab + Other: 3 + 0 + 0  
GEOG F203  World Economic Geography  (s)  
3 Credits  
Offered As Demand Warrants  
Study of the world's major economic activities: their physical and cultural bases, spatial growth and distribution patterns, and their significance in interregional and international development.  
Lecture + Lab + Other: 3 + 0 + 0  
GEOG F207  Research Methods and Statistics in Geography  
3 Credits  
Offered As Demand Warrants  
Introduction to basic data collection and analysis techniques used in geographic research. Explores a variety of qualitative and quantitative geographic research methods. Includes research design, real-world field-work issues, and hands-on use of tools and computer methods for analysis and visual display of spatial data. Students will gain an appreciation of the wide array of research methods and learn to critically interpret results and conclusions from both quantitative and qualitative perspectives.  
Prerequisites: Placement in MATH F113X or MATH F151X.  
Lecture + Lab + Other: 3 + 0 + 0  
GEOG F222  Fundamentals of Geospatial Sciences  
3 Credits  
Offered As Demand Warrants  
This course is an introduction to the principles and applications of geospatial science (remote sensing, GIS and GPS). Fundamental concepts include electromagnetic radiations, map projections, basic computer science, data formats, map-reading and map-making, etc. Practical exercises include field data collections using GPS, photo-interpretation using image processing and GIS software packages.  
Prerequisites: GEOG F111X or GEOS F101X.  
Cross-listed with GEOS F222.  
Lecture + Lab + Other: 2.5 + 1.5 + 0  
GEOG F300  Internship in Geography  
1-3 Credits  
Offered As Demand Warrants  
Supervised pre-professional experience in a business or agency (public or private). Open to students majoring or minoring in geography only. Course may be repeated for credit up to a maximum of 6 credits.  
Prerequisites: GEOG F101X; junior standing with 3.0 GPA; an approved internship plan.  
Lecture + Lab + Other: 0 + 0 + 3-10  
GEOG F302  Geography of Alaska  (s, a)  
3 Credits  
Offered Fall, Spring and Summer  
Regional, physical and economic geography of Alaska. Special consideration of the state's renewable and nonrenewable resources and of plans for their wise use. Frequent class study of representative maps and visual materials.  
Lecture + Lab + Other: 3 + 0 + 0  
GEOG F303  Geography of United States and Canada  (s, a)  
3 Credits  
Offered Fall Even-numbered Years  
In-depth examination of the natural, political, cultural, and economic characteristics of the U.S. and Canada and their major sub-regions. Explores contrasts in U.S. and Canadian historical, cultural and political geography; sources of national identity; and interactions with aboriginal peoples. Includes economic and political relationships between the two countries, and the role each has played in current and historical world affairs.  
Prerequisites: An introductory geography course or background in United States or Canadian history, social science, or cultures.  
Lecture + Lab + Other: 3 + 0 + 0
GEOG F305  Geography of Europe  (W, s)
3 Credits
Offered Spring Even-numbered Years
In-depth examination of the natural, political, cultural and economic characteristics of Europe and its major sub-regions. Explores current political and economic transformations, historical and contemporary world influences, and issues of nationalism and identity.
**Prerequisites:** WRTG F111X; WRTG F211X, WRTG F212X, WRTG F213X or WRTG F214X; an introductory geography course or background in European history, social science, or culture.
**Lecture + Lab + Other:** 3 + 0 + 0

GEOG F306  Geography of Russia  (s, a)
3 Credits
Offered Spring Even-numbered Years
Examines the processes that shape the places, regions and landscapes of Russia and the countries of the former Soviet Union. Explores the influence of Northern Eurasia’s physical geography on Russia’s social, political and cultural development; Russia’s role in twenty-first century geopolitical and economic affairs; Russia’s conflicting spatial identities as expressed through art, literature, architecture and political discourse; and environmental attitudes and practices during the Imperial, Soviet and post-Soviet periods.
**Prerequisites:** GEOG F101X or GEOG F111X; or a course in Russian history or culture.
**Lecture + Lab + Other:** 3 + 0 + 0

GEOG F307  Weather and Climate  (n, a)
3 Credits
Offered As Demand Warrants
Weather systems and climate classification. Emphasis on weather system processes, measuring weather variables and physical processes of the atmosphere.
**Prerequisites:** GEOG F111X.
**Lecture + Lab + Other:** 3 + 0 + 0

GEOG F309  Digital Cartography and Geovisualization  (s)
4 Credits
Offered Spring Odd-numbered Years
The concepts of map design, layout and presentation to effectively visualize and communicate complex spatial data.
**Prerequisites:** Permission of instructor.
**Lecture + Lab + Other:** 3 + 3 + 0

GEOG F311  Geography of Asia  (W, s)
3 Credits
Offered Spring Odd-numbered Years
Examines the natural, political, cultural, and economic characteristics of China, Japan, India-Pakistan, Southeast Asia, and the Asiatic countries of the Middle East. Explores historical and current political and economic transformations, historical, and contemporary world influences, and foundations of regional political, economic, and military conflicts.
**Prerequisites:** WRTG F111X; WRTG F211X, WRTG F212X, WRTG F213X or WRTG F214X; an introductory geography course or background in Asian history, social science, or culture.
**Lecture + Lab + Other:** 3 + 0 + 0

GEOG F312  People, Places and Environment: Principles of Human Geography  (s)
3 Credits
Offered Fall
Examines how human activity manifests itself on the earth’s surface through the geographic lenses of ethnicity, politics, industry, language, religion, and demographics. Explores spatial patterns, relationships and contrasts between places, origin and diffusion of traits, and human interactions with the environment.
**Prerequisites:** GEOG F101X.
**Lecture + Lab + Other:** 3 + 0 + 0

GEOG F338  Introduction to Geographic Information Systems  3 Credits
Offered Fall
Geographic data concepts including mapping systems, data sources, editing data, GIS analysis and computer mapping. Introduction to global positioning systems. GIS applications in natural resources management.
**Prerequisites:** Knowledge of PCs or Unix workstations desirable.
**Cross-listed with** NRM F338.
**Lecture + Lab + Other:** 2 + 3 + 0

GEOG F339  Change Detection in Arctic Systems  (n, n, a)
4 Credits
Offered Spring Odd-numbered Years
This course focuses on methods for measuring landscape change within Arctic Systems as well as the geomorphology of glacial landforms. A semester long research project, field and lab based activities, and a field trip will provide opportunities to learn about and experience the application of a variety of technologies.
**Prerequisites:** GEOG F111X or GEOG F101X; NRM F338.
**Cross-listed with** GEOS F339.
**Lecture + Lab + Other:** 3 + 3 + 0

GEOG F405  Political Geography  (s)
3 Credits
Offered As Demand Warrants
Geographical analysis of the evolution, structure, internal coherence and sources of strength of individual nation states, with emphasis on nations of the Pacific realm and Arctic periphery. Consideration of regional blocs, spheres of influence and potential for international cooperation.
**Prerequisites:** GEOG F101X.
**Lecture + Lab + Other:** 3 + 0 + 0

GEOG F410  Geography of the Pacific Rim  3 Credits
Offered As Demand Warrants
Examines the physical and human geography of the Pacific Rim. Will employ both a global and topical approach and include aspects of environmental, historic, economic, social, and political issues. Regional studies on physical and human geographic attributes of selected countries will be analyzed and compared.
**Prerequisites:** GEOG F101X; GEOG F111X.
**Lecture + Lab + Other:** 3 + 0 + 0
GEOG F412  Geography of Climate and Environmental Change  (a)  
3 Credits  
Offered As Demand Warrants  
Serves as a 'synthesis' breadth course focusing on the geography of climate and environmental change. The major concepts of global climate processes and climate change will be reviewed on multiple time scales. The impacts of natural and anthropogenic environmental change will be examined through selected case studies and readings (e.g. permafrost, invasive species, sea ice, fire, urbanization).  
Prerequisites: GEOG F307 or ATM F101X or ATM F401.  
Lecture + Lab + Other: 3 + 0 + 0  
GEOG F418  Biogeography  (a)  
3 Credits  
Offered Fall  
This course explores the geography of life by examining linkages between climate, geomorphology, and ecological communities with emphasis on the biogeography of sub-Arctic, polar and alpine regions.  
Prerequisites: NRM F277 or BIOL F371; junior/senior standing.  
Cross-listed with BIOL F418.  
Stacked with GEOG F618; BIOL F618.  
Lecture + Lab + Other: 3 + 0 + 0  
GEOG F427  Polar Geography  (s, a)  
3 Credits  
Offered Fall Odd-numbered Years  
Comparative physical, cultural, political and economic geography of the Circumpolar North and Antarctic regions. Special attention to Arctic natural resource development, climate change in both polar regions and polar geopolitics.  
Prerequisites: GEOG F101X or GEOG F111X.  
Cross-listed with ACNS F427.  
Stacked with GEOG F627; ACNS F627.  
Lecture + Lab + Other: 3 + 0 + 0  
GEOG F430  Google Earth and Geonography  
3 Credits  
Offered Spring  
Neogeography describes a new generation of primarily web-based mapping techniques and technologies. This course teaches advanced use of some of the latest neogeography tools, such as Google Earth, Maps Engine and Earth Engine. The skills and techniques learned will be applicable in academic, government and industry settings as a way to produce dynamic visualizations from any dataset with a geospatial component, for purposes of data presentation, analysis and research.  
Prerequisites: junior standing with completed course work in geographic methods (GEOG F309; GEOG F339; GEOS F304; GEOS F422; GEOS F458; NRM F338; NRM F435).  
Lecture + Lab + Other: 3 + 0 + 0  
GEOG F435  GIS Analysis  
4 Credits  
Offered Spring  
GIS analysis of natural resources including spatial query, attribute query, vector, grid, image, topographic and network analysis techniques.  
Cross-listed with NRM F435.  
Lecture + Lab + Other: 3 + 3 + 0  
GEOG F454  Comparative Farming and Sustainable Food Systems  
3 Credits  
Offered As Demand Warrants  
Principles of food systems geography and food security. Cross-cultural examination of dietary traditions, poverty, hunger, equity and food access and distribution. Comparison of multiple varieties and scales of agricultural systems in the context of social, ecological and economic sustainability. Considers Alaskan and other high-latitude food systems, including country food, wild game harvest and rural to urban nutrition transition.  
Prerequisites: WRTG F211X, WRTG F212X, WRTG F213X or WRTG F214X; junior standing.  
Cross-listed with NRM F454 and CCS F454.  
Lecture + Lab + Other: 3 + 0 + 0  
GEOG F458  Applications of GPS and GIS in Geophysics  (n)  
3 Credits  
Offered As Demand Warrants  
Prerequisites: GEOG F338 or NRM F338.  
Cross-listed with GEOS F458.  
Stacked with GEOS F658.  
Lecture + Lab + Other: 2 + 3 + 0  
GEOG F460  The Dynamic Alaska Coastline  
3 Credits  
Offered Spring Even-numbered Years  
Alaska's diverse coastal system provides abundant ecosystem services and globally important resources. This course provides an interdisciplinary perspective on the dynamic coastal landscape of Alaska from Southcentral to the Arctic, and delves into the driving geological, oceanographic and climate processes shaping Alaska's past and present coastline. Through a semester long research projects students will learn how to measure and map coastal changes associated with natural and human perturbations. An overnight field trip will serve as an active learning opportunity to integrate course knowledge with hands-on field work.  
Prerequisites: Junior standing; GEOG F111X or GEOS F101X; CHEM F105X or PHYS F123X; NRM F338 or equivalent GIS coursework.  
Cross-listed with GEOS F460.  
Stacked with GEOS F660; GEOG F660.  
Lecture + Lab + Other: 3 + 0 + 0  
GEOG F464  Wilderness Management  
3 Credits  
Offered Spring  
Wilderness ecology and land management practices on lands designated as wilderness. Plus, visitor management regimes are analyzed. Both national and international views of wilderness are presented.  
Prerequisites: A basic course in ecology; resource management.  
Cross-listed with NRM F464.  
Lecture + Lab + Other: 3 + 0 + 0  

Geography (GEOG)
GEOG F478  Ice Age Alaska  (a)  
3 Credits  
Offered Fall Even-numbered Years  
An overview of the paleoenvironments of Alaska including climate, glacier and biotic history including humans. Emphasis on events of the past that have left important legacies on present landscapes. The course begins with two weekend field trips and then surveys key literature describing Alaska's ice-age history. The focus is on Alaska and the Yukon, but topics will range more widely into other parts of the Arctic and its adjacent seas.  
Prerequisites: Senior standing in anthropology, biological sciences, Earth science, geography, geoscience, or northern studies.  
Cross-listed with GEOS F478.  
Stacked with GEOG F678;GEOS F678.  
Lecture + Lab + Other: 3 + 0 + 0

GEOG F483  Research Design, Writing and Presentation Methods  (O, W, n)  
3 Credits  
Offered Fall  
This course is designed as a capstone research and professional development course for geography, natural resources management and geoscience majors. Students will focus on designing an individual research project and proposal. This course will provide real world active learning assignments that seek to integrate the knowledge and skills gained through undergraduate work, and prepares students for graduate and professional level projects. The course will focus on scientific writing, and the oral, written and graphical presentation of data and research results.  
Prerequisites: COJO F131X or COJO F141X; WRTG F211X, WRTG F212X, WRTG F213X or WRTG F214X; junior standing.  
Cross-listed with GEOS F483.  
Lecture + Lab + Other: 3 + 0 + 0

GEOG F488  Geographic Assessment and Prediction of Natural Hazards  
3 Credits  
Offered As Demand Warrants  
Integrate aspects of physical geography with the human dimension via the study of the assessment and prediction of natural hazards. Guest speakers, case studies, and applied practical exercises will help students transition from content-based courses to applying their knowledge in 'real-world' situations, using geographic tools in remote sensing and GIS.  
Prerequisites: GEOG F111X.  
Lecture + Lab + Other: 3 + 0 + 0

GEOG F490  Geography Seminar  (O, W, s)  
3 Credits  
Offered Spring  
Discussion of geographic thought including past, present and future directions of the discipline. Contributions of geography to science, philosophy and ethics integrated through detailed review of current scholarship and research.  
Prerequisites: COJO F131X or COJO F141X; WRTG F211X, WRTG F212X, WRTG F213X or WRTG F214X; senior standing.  
Lecture + Lab + Other: 3 + 0 + 0

GEOG F618  Biogeography  (a)  
3 Credits  
Offered Fall  
This course explores the geography of life by examining linkages between climate, geomorphology, and ecological communities with emphasis on the biogeography of sub-Arctic, polar and alpine regions.  
Prerequisites: Graduate standing.  
Cross-listed with BIOL F618.  
Stacked with GEOG F418 and BIOL F418.  
Lecture + Lab + Other: 3 + 0 + 0

GEOG F627  Polar Geography  (a)  
3 Credits  
Offered Fall Odd-numbered Years  
Comparative physical, cultural, political and economic geography of the Circumpolar North and Antarctic regions. Special attention to Arctic natural resource development, climate change in both polar regions and polar geopolitics.  
Prerequisites: Graduate standing.  
Cross-listed with ACNS F627.  
Stacked with GEOG F427, ACNS F427.  
Lecture + Lab + Other: 3 + 0 + 0

GEOG F656  Sustainable Livelihoods and Community Well-being  
3 Credits  
Offered As Demand Warrants  
Review the basic principles that govern the sustainability of systems and look at the cultural practices and individual behaviors that enhance or degrade sustainable livelihoods and community well-being. Emphasis is on understanding the historical context of ideas about sustainability, on understanding the nature and magnitude of the social, economic and ecological dimensions of contemporary change, and the 'best practices' currently in place for communities to respond effectively to change.  
Prerequisites: Graduate standing.  
Cross-listed with NRM F656 and CCS F656.  
Lecture + Lab + Other: 3 + 0 + 0

GEOG F660  The Dynamic Alaska Coastline  
3 Credits  
Offered Spring Even-numbered Years  
Alaska's diverse coastal system provides abundant ecosystem services and globally important resources. This course provides an interdisciplinary perspective on the dynamic coastal landscape of Alaska from Southcentral to the Arctic, and delves into the driving geological, oceanographic and climate processes shaping Alaska's past and present coastline. Through a semester long research projects students will learn how to measure and map coastal changes associated with natural and human perturbations. An overnight field trip will serve as an active learning opportunity to integrate course knowledge with hands-on field work.  
Prerequisites: Graduate standing.  
Cross-listed with GEOS F660.  
Stacked with GEOG F460;GEOS F460.  
Lecture + Lab + Other: 3 + 0 + 0
GEOG F678  Ice Age Alaska  (a)
3 Credits
Offered Fall Even-numbered Years
An overview of the paleoenvironments of Alaska including climate, glacier
and biotic history including humans. Emphasis on events of the past that
have left important legacies on present landscapes. The course begins
with two weekend field trips and then surveys key literature describing
Alaska's ice-age history. The focus is on Alaska and the Yukon, but topics
will range more widely into other parts of the Arctic and its adjacent seas.
Prerequisites: Graduate standing in anthropology, biological sciences,
Earth science, geography, geoscience, or northern studies.
Cross-listed with GEOS F678.
Stacked with GEOG F478; GEOS F478.
Lecture + Lab + Other: 3 + 0 + 0

GEOG F692  Graduate Seminar
1-3 Credits
Topics in natural resources management and geography explored
through readings, student presentations, group discussions and guest speakers.
Prerequisites: Graduate standing.
Cross-listed with NRM F692.
Lecture + Lab + Other: 1-3 + 0 + 0

GEOG F699  Thesis
1-12 Credits
Lecture + Lab + Other: 0 + 0 + 0