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 + 3 + 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 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.
Crosslisted with GEOS F222.
Lecture + Lab + Other: 2.5 + 1.5 + 0
GEOG F300  Internship in Geography or Geoscience 1-3 Credits
Offered Fall, Spring and Summer
Supervised pre-professional experience in a business or agency (public or private). Course may be repeated for credit up to a maximum of 6 credits.
Prerequisites: Junior or Senior standing with 3.0 GPA; an internship plan approved by the intern's faculty supervisor.
Crosslisted with GEOS F300.
Lecture + Lab + Other: 0 + 0 + 3-10
GEOG F302  Geography of Alaska  (s, a)
3 Credits
Offered Fall, Spring and Summer
Examines the environmental, political, cultural, and economic characteristics of Alaska and its sub-regions. Explores historical and contemporary political and economic relationships to Russia, the U.S., Asia, Circumpolar nations, and Alaska Native peoples. Also explores Alaska's contemporary resource development issues and environmental challenges, with an emphasis on impacts of climate change.
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.
Crosslisted with GEOS F303.
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 HIST F100X; 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 F308  Geomorphology (n)  3 Credits  
Offered Fall Even-numbered Years  
Surface features of the Earth and the processes which create or modify them. Application to Quaternary history, environmental science and related fields. Laboratory examination of topographic maps and aerial photographs, introduction to geomorphic measurements.  
**Prerequisites:** GEOS F101X, GEOG F111X.  
**Crosslisted with:** GEOG F304.  
**Lecture + Lab + Other:** 3 + 0 + 0

GEOG F310  Digital Cartography and Geovisualization (s)  4 Credits  
Offered As Demand Warrants  
The concepts of map design, layout and presentation to effectively visualize and communicate complex spatial data.  
**Prerequisites:** Permission of instructor.  
**Cross-listed with:** GEOS F310.  
**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 GEOS F101X; NRM F338.  
**Cross-listed with:** GEOG 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 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 F422  Geoscience Applications of Remote Sensing (n)  3 Credits  
Offered As Demand Warrants  
Remote sensing and its applications to geologic, environmental and physical sciences. Includes physical principles, digital image processing and hands-on project experience using satellite images for mapping and change detection. Course is not available for audit.  
**Prerequisites:** PHYS F124X or PHYS F212X; junior standing.  
**Cross-listed with:** GEOS F422.  
**Lecture + Lab + Other:** 2 + 3 + 0
GEOG F429  Geography of the Arctic and Circumpolar North  (s, a) 3 Credits Offered Fall An in-depth examination of the physical, cultural, social, political and economic geographies of the Circumpolar North. Special emphasis on the patterns and processes of contemporary environmental change, human adaptations to high latitude environments, Arctic geopolitics and security, and the spatial patterns of northern economic development. **Prerequisites:** GEOG F101X or GEOG F111X.

**Cross-listed with** GEOG F423, NRM F429.

**Lecture + Lab + Other:** 3 + 0 + 0

GEOG F430  Google Earth and Neogeography  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 F310; 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 F423  Geopolitics of Energy  (s) 3 Credits Offered Fall Odd-numbered Years Examines the impacts that energy resource exploration, development, production, and transportation have on the internal politics of various countries in the world, and on international economic and political relationships. Explores the cultural, political, economic, physical, and historical underpinnings of contemporary geopolitical events involving energy resources, and explores possible future scenarios. **Prerequisites:** One of the following courses: GEOG F101X, GEOG F312, GEOG F405, GEOG F101X, NRM F101, NRM F403, PS F201X, PS F221X, PS F304, PS F323, ECON F235X, ECON F335, ECON F439 or ECON F463; junior standing.

**Recommended:** GEOG F101X.

**Cross-listed with** GEOG F423, NRM F423.

**Lecture + Lab + Other:** 3 + 0 + 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 Application of Geographic Information Systems (GIS) to geospatial problems in volcanology, glaciology, environmental mapping and other geophysical disciplines. Landscape classification, linear regression modeling, and manipulation of geodatabases using ESRI's ArcGIS software. Use of model builder and Python scripting to automate geospatial processing. Hands-on experience with recreational, mapping and survey-grade GPS receivers. Differential correction of GPS solutions using real-time and post-processing methods. Course is not available for audit.

**Prerequisites:** GEOG F338 or NRM F338.

**Cross-listed with** GEOG F458.

**Stacked with** GEOG F658.

**Lecture + Lab + Other:** 3 + 0 + 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** GEOG F460.

**Stacked with** 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
GEOG F480  Climate Change Processes: Past, Present, Future  (a)
3 Credits
Offered Fall Odd-numbered Years
This “synthesis” course for Geography, NRM, or Natural Sciences undergraduates provides literacy in the rapidly developing field of climate change science. Students will gain an understanding of climate dynamics and Earth’s climate history and will be trained to critically evaluate the validity of paleoclimatic reconstructions and climate-model predictions.
Prerequisites: Junior or senior standing in major; ATM F401, GEOS F315, MSL F419 or MSL F481.
Cross-listed with ATM F480, GEOS F480.
Stacked with ATM F680, GEOS F680.
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 contemporary literature 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 F629  Geography of the Arctic and Circumpolar North  (a)
3 Credits
Offered Fall
An in-depth examination of the physical, cultural, social, political and economic geographies of the Circumpolar North. Special emphasis on the patterns and processes of contemporary environmental change, human adaptations to high latitude environments, Arctic geopolitics and security, and the spatial patterns of northern economic development.
Prerequisites: Graduate standing.
Cross-listed with ACNS F629.
Stacked with ACNS F429; GEOG F429; GEOS F429.
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 F660; GEOS F660.
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