

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.

Cross-listed 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.

Cross-listed 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.

Cross-listed 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** GEOS 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** 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 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 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, GEOS 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 GEOS F423, NRM F423.

Lecture + Lab + Other: 3 + 0 + 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 ACNS F429; GEOS F429.

Stacked with ACNS F629; GEOG F629.

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 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 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

GEOG F480 Climate Change Processes: Past, Present, Future (a)
4 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: 4 + 0 + 0

GEOG F483 Research Design, Writing and Presentation Methods (O, W, n)
3 Credits

Offered Fall

This is a capstone professional development class where students write a research proposal, participate in engagement activities, and produce professional documents that prepare students for graduate and professional careers. It is writing and oral intensive and will focus on the oral and written presentation of your work.

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 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 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