GEOGRAPHY (GEOG)

GEOG S101 Local Places, Global Regions: Introduction to Geography
3 credits (3+0)
GER. World regions; analysis of environment with emphasis on the major culture realms.

GEOG S102 Earth and Environment
4 credits (3+3)
Cross-listed as ENVS S102. GER. Examines the atmospheric, hydroospheric, lithospheric, and oceanic systems that define the environment; the interactions among these systems; energy as an environmental parameter; and the effects of physical systems on the biosphere. The labs focus on measurement and description of the environment using methods from meteorology, hydrology, and earth science. Global Positioning Systems and other relevant field techniques are introduced.
Prerequisite: MATH S105 or concurrent enrollment.

GEOG S110 Introduction to ArcGIS
1 credit (1+0)
Cross-listed as ENVS S110. Students will use ArcGIS software to analyze spatial and tabular data and to create maps and charts that present these data.

GEOG S111 Introduction to Differential GPS
1 credit (1+0)
Cross-listed as ENVS S111. An overview of the Global Positioning System; the development of a data dictionary; data acquisition using differential GPS; and integrating GPS data into environmental applications.

GEOG S210 Temperate Rainforest Ecosystems
3 credits (3+0)
A survey of the geography, ecology, and unique properties, dynamics, history, and species local to SE Alaska. The course will also survey temperate rainforests around the world, comparing and contrasting them to our local forests. It will conclude with discussions about the future of management and conservation in SE Alaskan forests.
Prerequisite: ENVS S102/GEOG S102 or instructor permission.

GEOG S213 Natural Hazards
3 credits (3+0)
A survey of natural hazards such as earthquakes, volcanic eruptions, mass movements, floods, meteorite impacts, and extreme weather. Analysis of the geologic and atmospheric processes that develop them, reasons why certain regions are more vulnerable to disasters, the interplay between natural events and anthropogenic activity, as well as disaster preparation, forecasting, and mitigation.
Prerequisite: GEOG S102/ENVS S102, or GEOL S104; and MATH S151 or concurrent enrollment.

GEOG S309 Mobile GIS Technology and Applications
2 credits (1+2)
Cross-listed as ENVS S309. Extends students' basic knowledge of GPS and GIS to allow interactive GIS mapping, data collection, and analysis in the field setting. Includes training in the use of handheld computers enabled with GPS and GIS software; design and use of field data collection forms that integrate with GIS; transfer and use of GIS data between desktop and field; and the utility of mobile GIS technology in navigation, civil engineering, environmental science, forestry and other fields. Available as ENVS S309A for one credit with no research project, or as ENVS S309 for two credits with a 25-hour research project.
Prerequisite: ENVS S110/GEOG S110 or ENVS S111/GEOG S111 or ENVS S338/GEOG S338.

GEOG S309A Mobile GIS Technology and Applications
1 credit (1+0)
Cross-listed as ENVS S309A. GEOG S309A is a one-credit version of GEOG S309, with no research project. Extends students' basic knowledge of GPS and GIS to allow interactive GIS mapping, data collection, and analysis in the field setting.
Prerequisite: ENVS S110/GEOG S110 or ENVS S111/GEOG S111, or instructor permission.

GEOG S312 Humans and the Environment
3 credits (3+0)
Cross-listed as ANTH S312. Anthropological approaches to the relationships between socio-cultural and ecological systems. Analysis of traditional ecological knowledge, subsistence patterns, and adaptations. Intensive study of selected cases and theories.

GEOG S313 Sustainable Resource Management
3 credits (3+0)
Focuses on the basic building blocks of natural resources, the history of their management (or mismanagement), current practices, major regulatory issues surrounding their exploitation, and examples of responsible resource management.
Prerequisite: ENVS S102/GEOG S102 or instructor permission.

GEOG S338 Introduction to GIS
3 credits (2+3)
Cross-listed as ENVS S338. Examines the representation of spatial data with vector object models, explores the relationship between spatial data and automated thematic mapping, and trains students in the use of GIS software.

GEOG S350 Interdisciplinary Perspectives on Climate Change
3 credits (3+0)
Exploration of current and evolving literature on climate change, and the social and cultural consequences of climate change. Emphasis is placed on interdisciplinary issues and communicating across disciplines. May be repeated for credit when content varies.
Prerequisite: Upper division standing and WRTG S211 or WRTG S212, and at least one GER in Natural Sciences and Mathematics.
GEOG S390 Critical Geography
3 credits (3+0)
Examines how space is produced through the creative ferment of social struggle over domination and insubordination. Our central concern will focus upon the differences and inequalities produced across various spatial scales, such as the urban, regional, national, and transnational, as well as oppositions of scale, such as city and country, center and periphery, and local and global. This course will engage theoretical questions, and will situate these inquiries within ethnographic and historical texts that clarify the principal dynamics involved in the social production of space.
Prerequisite: GEOG S101 or instructor permission.

GEOG S402 Human Ecology
3 credits (3+0)
Relationships of human beings with the land they occupy; study of the physical environment and human occupation of the world's major regions; consideration of the significance of cultural diversity, differing patterns of livelihood, settlement and population change. Prerequisite: GEOG S101.

GEOG S406 Remote Sensing
3 credits (3+0)
Cross-listed as ENV S406. Identification, interpretation and measurement of physical and cultural features using remotely sensed data; image enhancement and analysis; applications of remote sensing to different scientific disciplines; and an introduction to raster-based Geographic Information Systems. Prerequisite: MATH S151.

GEOG S407 Snow Hydrology
3 credits (3+2)
Cross-listed ENVS S407. An in-depth look at processes related to snow in mid-latitude areas. Topics include snow formation in the atmosphere, snow accumulation and distribution, snowpack metamorphism, avalanche dynamics, snowmelt runoff and chemistry, techniques for measuring snow properties, and case studies. Labs will entail collection of field data as well as analysis of data. Required labs may take place on Saturday. Prerequisite: Science or Geography major with upper division standing, or instructor permission.

GEOG S409 GIS Jam: Projects in GIS and Remote Sensing
1 to 3 credits variable (1-3 + 0)
Cross-listed as ENV S409. Project-based instruction in advanced GIS sensing analysis relating to a specific geospatial project or case study. Intended for students who have at least a basic GIS background and a specific project concept in mind. Variable credit (to be determined at time of registration). Each credit requires a certain level of attendance. Prerequisite: ENV S110/ENVS S110 or ENV S111/ENVS S111 or ENV S338/GEOG S338.

GEOG S410 Advanced Geographic Information Systems
3 credits (2 + 3)
Cross-listed as ENV S410. Advanced GIS examines the object models used for the representation of spatially continuous data and the analysis of those data. Specific topics include terrain models; classification; suitability analysis; utilizing imagery; local, focal and zonal functions; surface modeling, and geo-referencing. Prerequisite: ENV S338/GEOG S338.

GEOG S411 Specialized Training in GIS Software
1 credit (1+0)
Cross-listed as ENV S411. Extends student proficiency with GIS software through online lesson modules. Students select from over 100 online (distance-based) technical training modules, and under tutelage of faculty, complete training objectives to learn specific software subjects and enhance student's overall skill set in GIS. Prerequisite: ENV S338/GEOG S338.

GEOG S414 Biogeochemistry
3 credits (3+0)
Cross-listed as ENV S414. Deals with how biological and geochemical processes affect element cycles at a variety of spatial and temporal scales. Emphasizes contemporary research in the biogeochemistry of carbon, nitrogen, sulfur, selected metals, and organic compounds of natural and anthropogenic origin. Prerequisite: ENV/ENV S102, CHEM S106/CHEM S106L, or instructor permission.

GEOG S416 Biogeography and Landscape Ecology
4 credits (3+2)
Cross-listed as ENV S416. An introduction to two related disciplines emphasizing a geographical focus on natural processes. Landscape ecology studies large-scale ecological patterns and processes occurring on whole landscapes and biogeography studies species distribution in relation to environmental and historical factors. Students learn how these disciplines serve as foundations for decision making in land use planning, resource management, and biological conservation. Labs include the use of geospatial tools like GIS and remote sensing, and hands-on field exercises. Prerequisite: ENV S102/ENVS S102 or BIOL S104.

GEOG S490 Geography Seminar
2 credits (2+0)
Capstone seminar providing senior year geography majors with a format for interdisciplinary exploration of a current topic or theme in geography. Perspectives from physical and human geography will be addressed through a combination of instructor lectures, guest speakers, and student-led discussions and presentations. Prerequisite: Instructor permission.

GEOG S491 Internship
1-4 credits (0+0+4-16)
Part-time work in an approved science agency or natural resource based industry. The student is to be supervised by a senior employee of the agency in cooperation with the faculty member. Signed instructor approval form is required in order to register.

GEOG S498 Research in Geography
1-6 credits, (0+0+4-24)
Individual research in geography undertaken by a student in consultation with a member of the geography faculty. Student may submit research ideas, and with faculty input, develop them into a project. Requires consent of advisor and appropriate faculty sponsor, signed study contract, and instructor approval form. Prerequisite: Upper division standing and signed permission forms.