Geography

Overview

The Department of Geography provides a broad-ranging perspective on humans as inhabitants of Earth, both as transformers of nature and as the creators of social spaces. Geography provides an environmental bridge between the natural and human sciences and an interdisciplinary link among the social sciences and humanities through its concern with space and spatial relations. As geographic theory and research have expanded their horizons over the past quarter century, three research focuses have emerged to define geography at UC Berkeley:

1. **Earth System Science** is concerned with understanding the interlocking subsystems of the natural environment (atmosphere, hydrosphere, biosphere, lithosphere, and cryosphere) in which we live and how they may change with time. Departmental research and teaching in this area aim to provide a complex picture of a dynamic and changing Earth, including landforms, the atmosphere, oceans, ice sheets, and ecosystems. Area strengths lie in climate change and variability, glacial and riverine environments, terrestrial biogeochemistry, paleoecology, Quaternary stratigraphy, atmospheric physics and chemistry, and paleoenvironmental reconstruction. Our scholarship blends a rigorous understanding of process with curiosity about large-scale geographical phenomena.
2. **Development and Environment** is concerned with the social origins of natural resource use and abuse and the relation of economic growth to environmental quality around the world. Research and teaching in Development and Environment draw upon political ecology and social theory to explore the relations between natural and social systems, emphasizing patterns of access to and control over resources, property and management regimes, and systems of cultural meaning. Special emphasis is given to gendered practices, indigenous rights, religious signification, and the history of environmental thought.
3. **Urban and Cultural** is concerned with the intersection of global processes and locally situated systems of culture, politics, and economics at various spatial scales (urban, regional, national, international). Central concerns of Urban and cultural are shifting spatial patterns of industry, cities and modern life. Research and teaching address global economic forces, state politics, racial formations, social movements, labor organization, and consumer cultures.

Geography students are expected to have diverse interests and independent thought. We welcome students from a variety of backgrounds, including those with professional experience who wish to deepen their education. Students are encouraged to range freely through the curriculum and to follow their inspiration where it leads, working in tandem with faculty advisers. Graduate students often use two or three faculty in equal measure (including faculty affiliates and members from other departments) and collaborate with faculty on research, writing, and teaching. We expect students to read extensively, develop their research, technical and teaching skills, and produce well-crafted papers, projects, and dissertations.

Undergraduate Programs

Geography (http://guide.berkeley.edu/archive/2014-15/undergraduate/degree-programs/geography) : BA

Graduate Program

Geography (http://guide.berkeley.edu/archive/2014-15/graduate/degree-programs/geography) : PhD

Geography

GEOG 1 Global Environmental Change 4 Units
The global pattern of climate, landforms, vegetation, and soils. The relative importance of natural and human-induced change, global warming, forest clearance, accelerated soil erosion, glacial/postglacial climate change and its consequences.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Summer: 6 weeks - 7.5 hours of lecture and 5 hours of laboratory per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Byrne

GEOG N1 Global Environmental Change 3 Units
The global pattern of climate, landforms, vegetation, and soils. The relative importance of natural and human-induced change, global warming, forest clearance, accelerated soil erosion, glacial/postglacial climate change and its consequences.
Rules & Requirements

Credit Restrictions: Students will receive no credit for Geography N1 after completing Geography 1. A deficient grade in Geography 1 maybe removed by taking Geography N1.

Hours & Format

Summer: 6 weeks - 7.5 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

GEOG 4 World Peoples and Cultural Environments 4 Units
Historical and contemporary cultural-environmental patterns. The development and spread of cultural adaptations, human use of resources, transformation and creation of human environments.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of laboratory per week

Summer:
6 weeks - 7.5 hours of lecture and 2.5 hours of discussion per week
8 weeks - 6 hours of lecture and 2 hours of discussion per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

GEOG N4 World Peoples and Cultural Environments 3 Units
Historical and contemporary cultural-environmental patterns. The development and spread of cultural adaptations, human use of resources, transformation and creation of human environments.
Rules & Requirements

Credit Restrictions: Students will receive no credit for Geography N4 after completing Geography 4. A deficient grade in Geography 4 maybe removed by taking Geography N4.

Hours & Format

Summer: 6 weeks - 7.5 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

GEOG 10 World Regions, Peoples, and States 4 Units
This course will provide a framework for recognizing and analyzing the major distinctive regions of the world in comparative context. The most important interrelations between environment, economy, ethnicity, and the national identity and viability of states will be explored.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Kosek

GEOG 20 Globalization 4 Units
How and why are geographical patterns of employment, production, and consumption unstable in the contemporary world? What are the consequences of NAFTA, an expanded European Community, and post-colonial migration flows? How is global restructuring culturally reworked locally and nationally?
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

GEOG N20 Globalization 3 Units
Global economics and politics are undergoing a revolution. Transnational enterprises, international trade, and digitized finance are merging its formerly separate national economies. New regional and transnational treaties and institutions, from the EU and NAFTA to the IMF, the WTO and the World Bank, are arising to regulate the new global economy. Power is being transferred from national states to these institutions, not always smoothly or in predictable ways. This course is about this medley.
Hours & Format

Summer:
6 weeks - 7.5 hours of lecture per week
8 weeks - 5.5 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam not required.

GEOG 24 Freshman Seminar 1 Unit
The Freshman Seminar Program has been designed to provide new students with the opportunity to explore an intellectual topic with a faculty member in a small seminar setting. Freshman seminars are offered in all campus departments, and topics vary from department to department and semester to semester. Enrollment limited to 15 freshmen.
Rules & Requirements

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 1 hour of seminar per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: The grading option will be decided by the instructor when the class is offered. Final exam required.

GEOG 31 Justice, Nature, and the Geographies of Identity 4 Units
The intersection of nature, identity, and politics pepper the pages of newspapers almost every day from stories of toxic waste sites, crime, genetic engineering to indigenous struggles, and terrorist tendencies. In all these and many other cases, ideas of race, class, and gender intersect with ideas of nature and geography in often tenacious and troubling ways. Our approach will be to understand these traditional ideas of environmental justice as well as to examine less traditional sites of environmental justice such as the laboratory, the war zone, the urban mall, and the courtroom.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Kosek

GEOG C32 Introduction to Development 4 Units
This course is designed as an introduction to comparative development. The course will be a general service course, as well as a prerequisite for the upper division 100 series. It is assumed that students enrolled in 10 know little about life in the Third World countries and are unfamiliar with the relevant theory in political economy of development and underdevelopment. The course will be structured around three critical concepts: land, labor, and work.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Summer: 8 weeks - 7.5 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Watts

Also listed as: DEV STD C10

GEOG 35 Global Ecology and Development 4 Units
Problems of Third World poverty and development have come to be seen as inseparable from environmental health and sustainability. The course explores the global and interconnected character of environment and development in the less developed world. Drawing on case studies of the environmental problems of the newly industrializing states, food problems, and environmental security in Africa, and the global consequences of tropical deforestation in Amazonia and carbon dioxide emissions in China, this course explores how growth and stagnation are linked to problems of environmental sustainability.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Summer:
6 weeks - 8 hours of lecture and 2 hours of discussion per week
8 weeks - 6 hours of lecture and 1.5 hours of discussion per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Watts

GEOG 37 The Politics of Science and Technology 4 Units
This course examines how shifting understandings of science and technology have radically remade some of our most basic social and biological categories and concepts. The course explores the field of science and technology studies. In particular, students will explore formations and understandings of truth, objectivity, universality of science and technology, and the consequences of these cultural formations in contemporary debates around the world.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Kosek

GEOG 40 Introduction to Earth System Science 4 Units
The goals of this introductory Earth System Science course are to achieve a scientific understanding of important problems in global environmental change and to learn how to analyze a complex system using scientific methods. Earth System Science is an interdisciplinary field that describes the cycling of energy and matter between the different spheres (atmosphere, hydrosphere, biosphere, cryosphere, and lithosphere) of the earth system. Under the overarching themes of human-induced climate change, stratospheric ozone depletion, and biodiversity loss, we will explore key concepts of solar radiation, plate tectonics, atmospheric and oceanic circulation, and the history of life on Earth.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of discussion per week

Summer:
6 weeks - 7.5 hours of lecture and 5 hours of discussion per week
8 weeks - 5.5 hours of lecture and 4 hours of discussion per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructors: Chiang, Cuffey, Rhew, Larsen

GEOG 50AC California 4 Units
California had been called "the great exception" and "America, only more so." Yet few of us pay attention to its distinctive traits and to its effects beyond our borders. California may be "a state of mind," but it is also the most dynamic place in the most powerful country in the world, and would be the 8th largest economy if it were a country. Its wealth has been built on mining, agriculture, industry, trade, and finance. Natural abundance and geographic advantage have played their parts, but the state’s greatest resource has been its wealth and diversity of people, who have made it a center of technological and cultural innovation from Hollywood to Silicon Valley. Yet California has a dark side of exploitation and racialization.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Summer:
6 weeks - 8 hours of lecture and 2 hours of discussion per week
8 weeks - 6 hours of lecture and 1.5 hours of discussion per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

GEOG N50AC California 3 Units
California had been called "the great exception" and "America, only more so." Yet few of us pay attention to its distinctive traits and to its effects beyond our borders. California may be "a state of mind," but it is also the most dynamic place in the most powerful country in the world, and would be the 8th largest economy if it were a country. Its wealth has been built on mining, agriculture, industry, trade, and finance. Natural abundance and geographic advantage have played their parts, but the state’s greatest resource has been its wealth and diversity of people, who have made it a center of technological and cultural innovation from Hollywood to Silicon Valley. Yet California has a dark side of exploitation and racialization.
Hours & Format

Summer: 6 weeks - 8 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

GEOG C55 Introduction to Central Asia 3 Units
This course will introduce the student not only to ancient and modern Central Asia, but also to the role played by the region in the shaping of the history of neighboring regions and regimes. The course will outline the history, languages, ethnicities, religions, and archaeology of the region and will acquaint the student with the historical foundations of some of the political, social and economic challenges for contemporary post-Soviet Central Asian republics.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Also listed as: NE STUD C26

GEOG 70AC The Urban Experience 3 Units
We will track the historical evolution of the American city. We’ll look at the economics of city life, at the organization of metropolitan political power, and at the aesthetics of the urban scene--to see how the core cultural themes of American urban life have endured over time while continuously adjusting to new circumstances. Our approach is to focus on major themes in urban life and to show how various groups have had different kinds of experiences in these urban realms.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Summer: 6 weeks - 8 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Johns

GEOG 80 Digital Worlds: An Introduction to Geospatial Technologies 4 Units
An introduction to the increasingly diverse range of geospatial technologies and tools including but not limited to geographical information systems (GIS). Via a mix of lecture and lab-based instruction, students will develop knowledge and skills in web-mapping and GIS. How these tools are used to represent fundamental geographic concepts, and the wider socioeconomic context of these technologies will also be explored.
Rules & Requirements

Prerequisites: Basic computer literacy (e.g., Excel or similar)

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: O'Sullivan

GEOG C82 Oceans 3 Units
This course offers multidisciplinary approach to begin answering the question "Why are oceans important to us?" Upon a physical, chemical, and geologic base, we introduce the alien world of sea life, the importance of the ocean to the global carbon cycle, and the principles of ecology with a focus on the important concept of energy flow through food webs. Lectures expand beyond science to include current topics as diverse as music, movies, mythology, biomechanics, policy, and trade.
Rules & Requirements

Credit Restrictions: Students will receive no credit for Earth and Planetary Science C82/Geography C82/Integrative Biology C82 after completing Integrative Biology 82 or Earth and Planetary Science N82.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Summer:
6 weeks - 7.5 hours of lecture and 2.5 hours of discussion per week
8 weeks - 5.5 hours of lecture and 1.5 hours of discussion per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Also listed as: EPS C82/INTEGBI C82

GEOG 98 Directed Group Study 1 - 4 Units
Lectures and small group discussion focusing on topics of interest that vary from semester to semester.
Rules & Requirements

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 1-4 hours of directed group study per week

Summer:
6 weeks - 1-4 hours of directed group study per week
8 weeks - 1-4 hours of directed group study per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.

GEOG 109 Prehistoric Agriculture 4 Units
Agricultural origins and dispersals in the light of recent biological and archaeological evidence.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Byrne

GEOG C112 History of Development and Underdevelopment 4 Units
Historical review of the development of world economic systems and the impact of these developments on less advanced countries. Course objective is to provide a background against which to understand and assess theoretical interpretations of development and underdevelopment.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Hart

Also listed as: DEV STD C100

GEOG 123 Postcolonial Geographies 4 Units
Postcolonial studies focus on how processes of colonialism/imperialism continue even after the formal dissolution of empire. A central argument of this course is that critical human geography can make important contributions to understanding the interconnections between forces at play in different parts of the world. Drawing on concepts of space, place, culture, power, and difference, its purpose is to provide a set of tools for grappling with the conditions in which we find ourselves, and for thinking about the possibilities for social change.
Hours & Format

Fall and/or spring: 15 weeks - 4 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Hart

GEOG 125 The American City 4 Units
The American city, palimpsest of a nation. It all comes together in the modern metropolis: economy, society, politics, culture, and geography. Cities as the economic engines of capitalism, centers of industry, finance, business, consumption, and innovation. Cities as political powers and political pawns, and the government of cities, suburbs, and metropolitan areas. Cities as magnificent constructs, built of concrete, credit and land rents, from skyscrapers to housing tracts, freeways to shopping malls, airports to open spaces. Cities as landscapes of social division by class, race and nationality, and the turf battles from mean ghetto streets to the hideaways of privilege.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

GEOG 130 Food and the Environment 4 Units
How do human populations organize and alter natural resources and ecosystems to produce food? The role of agriculture in the world economy, national development, and environmental degradation in the Global North and the Global South. The origins of scarcity and abundance, population growth, hunger and obesity, and poverty.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Summer:
6 weeks - 7.5 hours of lecture and 2.5 hours of discussion per week
8 weeks - 6 hours of lecture and 2 hours of discussion per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructors: Sayre, Watts

GEOG N130 Food and the Environment 3 Units
How do human populations organize and alter natural resources and ecosystems to produce food? The role of agriculture in the world economy, national development, and environmental degradation in the Global North and the Global South. The origins of scarcity and abundance, population growth, hunger and obesity, and poverty.
Hours & Format

Summer:
6 weeks - 7.5 hours of lecture per week
8 weeks - 5.5 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

GEOG C135 Water Resources and the Environment 3 Units
Distribution, dynamics, and use of water resources in the global environment. Water scarcity, water rights, and water wars. The terrestrial hydrologic cycle. Contemporary environmental issues in water resource management, including droughts, floods, saltwater intrusion, water contamination and remediation, river restoration, hydraulic fracturing, dams, and engineering of waterways. The role of water in ecosystem processes and geomorphology. How water resources are measured and monitored. Basic water resource calculations. Effects of climate change on water quantity, quality, and timing.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Alternative to final exam.

Instructor: Larsen

Also listed as: ESPM C133

GEOG C136 Terrestrial Hydrology 4 Units
A quantitative introduction to the hydrology of the terrestrial environment including lower atmosphere, watersheds, lakes, and streams. All aspects of the hydrologic cycle, including precipitation, infiltration, evapotranspiration, overland flow, streamflow, and groundwater flow. Chemistry and dating of groundwater and surface water. Development of quantitative insights through problem solving and use of simple models. This course requires one field experiment and several group computer lab assignments.
Rules & Requirements

Prerequisites: Chemistry 1A, Mathematics 1A-1B, PHYSICS 7A, or consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Alternative to final exam.

Instructor: Larsen

Also listed as: ESPM C130

GEOG 137 Top Ten Global Environmental Problems 4 Units
Conceptualizing global environmental problems is difficult because of the complexity of the issues, the magnitude of the problems, and the different time scales of action versus reaction. These issues apply both to the natural earth system as well as human societies. This course will examine the scientific basis underlying the largest environmental threats, and then reframe the issues to explore the societal basis of those problems. Class is not open to freshmen.
Rules & Requirements

Prerequisites: Geography 40, ESPM 15, or equivalent

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam not required.

Instructor: Rhew

GEOG 138 Global Environmental Politics 4 Units
Political factors affecting ecological conditions in the Third World. Topics include environmental degradation, migrations, agricultural production, role of international aid, divergence in standard of living, political power, participation and decision making, access to resources, global environmental policies and treaties, political strife and war.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Summer: 6 weeks - 7.5 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

GEOG C139 Atmospheric Physics and Dynamics 3 Units
This course examines the processes that determine the structure and circulation of the Earth’s atmosphere. The approach is deductive rather than descriptive: to figure out the properties and behavior of the Earth’s atmosphere based on the laws of physics and fluid dynamics. Topics will include interaction between radiation and atmospheric composition; the role of water in the energy and radiation balance; governing equations for atmospheric motion, mass conservation, and thermodynamic energy balance; geostrophic flow, quasigeostrophic motion, baroclinic instability and dynamics of extratropical cyclones.
Rules & Requirements

Prerequisites: Mathematics 53, 54; PHYSICS 7A-7B-7C

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructors: Chiang, Fung

Also listed as: EPS C181

GEOG 140A Physical Landscapes: Process and Form 4 Units
Understanding the physical characteristics of the Earth's surface, and the processes active on it, is essential for maintaining the long-term health of the environment, and for appreciating the unique, defining qualities of geographic regions. In this course, we build an understanding of global tectonics, rivers, hillslopes, and coastlines and discover how these act in concert with the underlying geologic framework to produce the magnificent landscapes of our planet. Through our review of formative processes, we learn how physical landscapes change and are susceptible to human modifications, which are often unintentional.
Rules & Requirements

Prerequisites: 1 or equivalent

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Cuffey

GEOG 142 Climate Dynamics 4 Units
This course examines how various components of the climate system--the atmosphere, ocean, land, and cryosphere--interact in determining its observed state. Covered topics: observations of the climate system; the earth's energy balance; atmospheric radiative transfer; the surface energy balance; the hydrologic cycle; atmospheric circulation and its relation to the energy balance; the role of the ocean and the cryosphere. Additional topics, as time permits, will cover climate change, natural and anthropogenic; and computer modeling of climate.
Rules & Requirements

Prerequisites: Consent of instructor needed if student has not taken an introductory-level undergraduate physics course

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Chiang

GEOG 143 Global Change Biogeochemistry 3 Units
How does the chemical makeup of Earth make it suitable for life? And how does life in turn alter the chemistry of our planet? Biogeochemistry is the field of science that explores the imprint of biota (including humans) on the chemistry of the ocean, land and atmosphere. This interdisciplinary field addresses global problems, including climate change feedbacks, air quality, land use change, and marine ecosystem health. We will provide an overview of the major biogeochemical cycles, discuss the biogeochemistry of major ecosystems, and introduce the major biogeochemical questions being asked today. We also cover measurement techniques, including hands-on activities to introduce students to experimental methods and data analysis.
Rules & Requirements

Prerequisites: Chemistry 1A or equivalent

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Rhew

GEOG 144 Principles of Meteorology 3 Units
Weather development in relation to different scales of atmospheric circulation including analysis and forecasting with examples from the Northeastern Pacific-Western North American area.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

GEOG C145 Geological Oceanography 4 Units
The tectonics and morphology of the sea floor, the geologic processes in the deep and shelf seas, and the climatic record contained in deep-sea sediments. The course will cover sources and composition of marine sediments, sea-level change, ocean circulation, paleoenvironmental reconstruction using fossils, imprint of climatic zonation on marine sediments, marine stratigraphy, and ocean floor resources.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 3 hours of laboratory per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Ingram

Formerly known as: Geology C145

Also listed as: EPS C146

GEOG C146 Communicating Ocean Science 4 Units
For undergraduates interested in improving their ability to communicate their scientific knowledge by teaching ocean science in elementary schools or science centers/aquariums. The course will combine instruction in inquiry-based teaching methods and learning pedagogy with six weeks of supervised teaching experience in a local school classroom or the Lawrence Hall of Science with a partner. Thus, students will practice communicating scientific knowledge and receive mentoring on how to improve their presentations.
Rules & Requirements

Prerequisites: One course in introductory biology, geology, chemistry, physics, or marine science required and interest in ocean science; junior, senior, or graduate standing; consent of instructor required for sophomores

Hours & Format

Fall and/or spring: 15 weeks - 2.5 hours of lecture, 1 hour of discussion, and 2 hours of fieldwork per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Ingram

Also listed as: EPS C100/INTEGBI C100

GEOG 147 Communicating Climate Science 3 Units
For upper division undergraduate students interested in improving their conceptual understanding of climate science and climate change through engaging in activities, demonstrations, and discussions, while also developing their science communication skills to advance the public's climate literacy. The course will combine science content, active teaching and learning methods based on how people learn, and how to engage in effective interactions.
Objectives & Outcomes

Course Objectives: As a result of this course, students will be able to 1) describe and use models to illustrate the processes, interactions and mechanisms contributing to climate change; 2) demonstrate an understanding of how people learn, and the importance and impact of social, cultural and worldview belief systems on behavior related to climate change, through effectively communicating ideas and engaging in meaningful discussions with diverse, non-expert audiences.

Rules & Requirements

Prerequisites: Prior coursework in climate change science

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructors: Rhew, Halversen, Chiang

GEOG 148 Biogeography 4 Units
Changing distribution patterns of plants and animals on a variety of spatial and temporal scales. The effects of "continental drift," Pleistocene climatic change, agricultural origins and dispersals. The ecology of invasions and extinctions. Island biogeography.
Rules & Requirements

Prerequisites: 1 or a lower division course in Biology or Earth Science

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Byrne

GEOG C152 Multicultural Europe 4 Units
In this course, we will trace some of the substantive changes and transformations taking place in contemporary Europe in the areas of culture, society, and politics. In particular, we will look at the effects of massive migration flows--due to globalization processes--on the national culture of the core countries and examine the ways in which particular national cultures react to the increasing multiculturization of Europe. The goal of the course is, first of all, to familiarize students with a variety of cultural, social, and political innovations that accompany the formation of multicultural Europe. This involves (1) an examination of the traditional concepts of nationhood and citizenship, and (2)a study of the Europeanization of culture.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Also listed as: HISTORY C176/ISF C145

GEOG C157 Central American Peoples and Cultures 4 Units
A comparative survey of the peoples and cultures of the seven countries of the Central American Isthmus from a historical and contemporary perspective.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Manz

Also listed as: CHICANO C161

GEOG 159AC The Southern Border 4 Units
The southern border--from California to Florida--is the longest physical divide between the First and Third Worlds. This course will examine the border as a distinct landscape where North-South relations take on a specific spatial and cultural dimension, and as a region which has been the testing ground for such issues as free trade, immigration, and ethnic politics.

Rules & Requirements

Prerequisites: Upper division standing

Requirements this course satisfies: Satisfies the American Cultures requirement

Hours & Format

Fall and/or spring: 15 weeks - 4 hours of lecture per week

Summer: 6 weeks - 10 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructors: Manz, Shaiken

Also listed as: EDUC 186AC/ETH STD 159AC

GEOG C160A American Cultural Landscapes, 1600 to 1900 4 Units
Introduces ways of seeing and interpreting American histories and cultures, as revealed in everyday built surroundings-- houses, highways, farms, factories, stores, recreation areas, small towns, city districts, and regions. Encourages students to read landscapes as records of past and present social relations and to speculate for themselves about cultural meaning.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Groth

Also listed as: AMERSTD C112A/ENV DES C169A

GEOG C160B American Cultural Landscapes, 1900 to Present 4 Units
Introduces ways of seeing and interpreting American histories and cultures, as revealed in everyday built surroundings--homes, highways, farms, factories, stores, recreation areas, small towns, city districts, and regions. Encourages students to read landscapes as records of past and present social relations, and to speculate for themselves about cultural meaning.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Groth

Also listed as: AMERSTD C112B/ENV DES C169B

GEOG 164 The Geography of Economic Development in China 4 Units
This course focuses on four issues in contemporary China: (1) the transformation of the socialist state, (2) the environmental politics, (3) the interplay of gender and class in the transitional society, (4) urban expansion and the changing rural-urban dynamics, and (5) global China. Each of these issues will be examined with reference to critical theories of development and histories of China's modernization. This is a lecture course designed mainly for upper level undergraduate students with preliminary background in East Asian-Chinese studies or development studies.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Hsing

GEOG 170 Special Topics in Geography 3 Units
This course is designed to provide a vehicle for instructors to address a topic with which they are especially concerned; usually more restricted than the subject matter of a regular lecture course. Topics will vary with instructor. See departmental announcements.

Rules & Requirements

Repeat rules: Course may be repeated for credit with different topic. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Summer: 6 weeks - 7.5 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

GEOG 171 Special Topics in Physical Geography 3 Units
This course is designed to provide a vehicle for instructors to address a topic in physical geography with which they are especially concerned; usually more restricted than the subject matter of a regular lecture course. Topics will vary with instructor. See departmental announcements.
Rules & Requirements

Repeat rules: Course may be repeated for credit as topic varies. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Summer: 6 weeks - 7.5 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: The grading option will be decided by the instructor when the class is offered. Final exam required.

GEOG 172 Topics in Social Geography 4 Units
This course is designed to provide a vehicle for instructors to address a topic in social geography with which they are especially concerned; usually more restricted than the subject matter of a regular lecture course. Topics will vary with instructor. See departmental announcements.
Rules & Requirements

Repeat rules: Course may be repeated for credit with different instructor or different topic. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 4 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

GEOG 173A Cross-listed Topics in Human Geography 1 - 4 Units
This course is designed to accommodate cross-listed courses offered through other departments, the content of which is applicable to geography majors. Content and unit values vary from course to course.
Rules & Requirements

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 1-4 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

GEOG 175 Undergraduate Seminars 4 Units
A reading and research seminar for undergraduate students. Topics will vary with instructor.
Rules & Requirements

Repeat rules: Course may be repeated for credit. Course may be repeated for credit with different topic and consent of instructor. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of seminar per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

GEOG 180 Field Methods for Physical Geography 5 Units
Field introduction to geomorphology, biogeography, and California landscapes. Students conduct field experiments and mapping exercises. Results of field projects are analyzed and presented as a technical report. Oral field reports are required for some trips.
Rules & Requirements

Prerequisites: 1 or equivalent, and consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 0 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

GEOG 181 Urban Field Study 4 Units
Introduction to the metropolitan Bay Area: its history, economy, social makeup. Evolution of urban landscapes and spatial patterns. Social justice and conflict in the city. Business and industry location, real estate and housing, producing and consuming in the city. Regional characteristics of class, race, gender and politics.
Rules & Requirements

Prerequisites: Consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 9 hours of fieldwork per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam not required.

GEOG 182 Field Study of Buildings and Cities 3 Units
Traveling on foot and by BART—and with on-site lectures and discussions about architecture, urban design, cultural landscapes, and spatial patterns in Berkeley, Oakland, San Francisco, and Pleasanton—students in this course will explore the historical geography of the American city since 1850. Enrollment limited to 25 students. No pre-requisites. Both undergraduate and graduate students are welcome.
Objectives & Outcomes

Course Objectives: The goal of this course is to introduce ways of seeing various building types, street and block forms, land use patterns, and other cultural features of the Bay Area as records of social relations and of repeating processes of American geographical history: cyclical periods of investment and disinvestment, migration and immigration, economic production and consumption, connection and disconnection, reinforcement of individual and social identities, as well as day-to-day maintenance and care

Hours & Format

Summer: 6 weeks - 7.5 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Alternative to final exam.

Instructor: Groth

GEOG 183 Cartographic Representation 5 Units
Problems in the representation of quantitative and qualitative data on thematic maps.
Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture and 4 hours of laboratory per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam not required.

GEOG 185 Earth System Remote Sensing 3 Units
This lecture-lab course is focused on Earth system remote sensing applications, including a survey of methods and an accompanying lab. This first part of the course will cover general principles, image acquisition and interpretation, and analytical approaches. The second part will cover global change remote sensing applications that will include terrestrial ecosystems, Earth sciences, the hydrosphere, and human land-use.
Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture and 1 hour of laboratory per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Chambers

GEOG 187 Geographic Information Analysis 4 Units
A spatial analytic approach to digital mapping and GIS. Given that recording the geolocation of scientific, business and social data is now routine, the question of what we can learn from the spatial aspect of data arises. This class looks at challenges in analyzing spatial data, particularly scale and spatial dependence. Various methods are considered such as hotspot detection, interpolation, and map overlay. The emphasis throughout is hands on and practical rather than theoretical.
Rules & Requirements

Prerequisites: Basic computer literacy, e.g., Excel or similar, some previous GIS or mapping useful, but not required

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture and 4 hours of laboratory per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: O'Sullivan

GEOG C188 Geographic Information Systems 4 Units
This course introduces the student to the rapidly expanding field of Geographic Information Systems (GIS). It addresses both theory and application and provides the student with a dynamic analytical framework within which temporal and spatial data and information is gathered, integrated, interpreted, and manipulated. It emphasizes a conceptual appreciation of GIS and offers an opportunity to apply some of those concepts to contemporary geographical and planning issues.
Rules & Requirements

Prerequisites: Some computer experience

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Instructor: Radke

Formerly known as: C188X

Also listed as: LD ARCH C188

GEOG H195A Honors Course 1 - 4 Units
Required for Honors in Geography. Students will write a thesis. One or two semesters, at the instructor's option; if two semesters, credit and grade to be awarded upon completion of the sequence.
Rules & Requirements

Prerequisites: Admission to Honors Program

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 1-4 hours of independent study per week

Summer:
6 weeks - 2.5-10 hours of independent study per week
8 weeks - 1.5-7.5 hours of independent study per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. This is part one of a year long series course. A provisional grade of IP (in progress) will be applied and later replaced with the final grade after completing part two of the series. Final exam not required.

GEOG H195B Honors Course 1 - 4 Units
Required for Honors in Geography. Students will write a thesis. One or two semesters, at the instructor's option; if two semesters, credit and grade to be awarded upon completion of the sequence.
Rules & Requirements

Prerequisites: Admission to Honors Program

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 1-4 hours of independent study per week

Summer:
6 weeks - 2.5-10 hours of independent study per week
8 weeks - 1.5-7.5 hours of independent study per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Letter grade. This is part two of a year long series course. Upon completion, the final grade will be applied to both parts of the series. Final exam not required.

GEOG 197 Field Study in Geography 1 - 4 Units
Supervised experience in application of geography in off-campus organizations. Regular individual meetings with faculty sponsor and written reports required.
Rules & Requirements

Prerequisites: Consent of instructor

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 0 hours of independent study per week

Summer:
6 weeks - 1-4 hours of independent study per week
8 weeks - 1-5 hours of independent study per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.

GEOG 198 Directed Group Study 1 - 4 Units
Rules & Requirements

Prerequisites: Consent of instructor

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 1-4 hours of directed group study per week

Summer:
6 weeks - 2.5-7.5 hours of directed group study per week
8 weeks - 1.5-7.5 hours of directed group study per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.

GEOG 199 Supervised Independent Study 1 - 4 Units
Rules & Requirements

Prerequisites: Senior standing. Overall GPA in major of 3.00

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 0 hours of independent study per week

Summer:
6 weeks - 1-5 hours of independent study per week
8 weeks - 1-5 hours of independent study per week

Additional Details

Subject/Course Level: Geography/Undergraduate

Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.

GEOG 200A Contemporary Geographic Thought 4 Units
The class has several goals. One is to give students a sound basis upon which to judge arguments. A second is to help students see, think, and write geographically--that is, to interpret the making and meaning of our physical and human landscapes. A third goal is to introduce students to the tremendous range of geographical inquiry and what is probably the major strength of geography as a form of thought: to wit, making links across space, among peoples, and between humans and the earth. Sequence begins in the fall.
Rules & Requirements

Prerequisites: Required of all first year graduate students

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of seminar per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

GEOG 200B Contemporary Geographic Thought 4 Units
The class has several goals. One is to give students a sound basis upon which to judge arguments. A second is to help students see, think, and write geographically--that is, to interpret the making and meaning of our physical and human landscapes. A third goal is to introduce students to the tremendous range of geographical inquiry and what is probably the major strength of geography as a form of thought: to wit, making links across space, among peoples, and between humans and the earth. Sequence begins in the fall.
Rules & Requirements

Prerequisites: Required of all first-year graduate students

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of seminar per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

GEOG 203 Nature and Culture: Social Theory, Social Practice, and the Environment 4 Units
The relationship between societies and natural environments lies at the heart of geographical inquiry and has gained urgency as the rate and scale of human transformation of nature have grown, often outstripping our understanding of causes and effects. The physical side of environmental science has received most of the emphasis in university research, but the social basis of environmental change must be studied as well. Recent developments in social theory have much to offer environmental studies, while the latter has, in turn, exploded many formerly safe assumptions about how and what the social sciences and humanities ought to be preoccupied with. This seminar allows students to explore some classics in environmental thought as well as recent contributions that put the field on the forefront of social knowledge today.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of seminar per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

Instructor: Sayre

GEOG 214 Development Theories and Practices 4 Units
This course examines how concepts and theories of "development" have been produced, maintained, used, and challenged in different regions of the world economy. It will offer a framework for analyzing how changing and contending models of development both reflect and shape social processes and practices.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

Instructor: Hart

GEOG 215 Seminar in Comparative and International Development 4 Units
This seminar is designed for students intending to do research on topics of comparative development, the organization of work, and access to resources in different regions of the world economy. Participants in the seminar will be expected to write a research proposal and to participate actively in reading and responding to each other's work.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of seminar per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

Instructors: Hart, Hsing

GEOG 220 Capital, Value, and Scale 4 Units
This seminar focuses on major works in political economy and social theory concerning capitalism, human action, and space-time. We grapple with what "value" means in "Capital", paying particular attention to issues of historical specificity, abstract labor time, and the "value theory of labor." We spatialize the argument by a close reading of David Harvey, and we look at attempts to understand capital's relation to human action and other forms of value, in anthropology and the work of Pierre Bourdieu. Finally, we take up the issue of scale in hope of formulating a coherent conceptual framework for integrating across scales, from the human-body (or even smaller scales) up to global, economic, cultural and ecological processes
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of seminar per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

Instructor: Sayre

GEOG 228 Spatial Simulation Modeling 4 Units
Simulation is now a widely adopted approach to science. This class will examine what simulation models are, and why and how they are used. Models that focus
on spatial processes (aggregation, segregation, diffusion, movement, growth) will be closely considered. A particular concern will be to explore how simulation
models may help elucidate the relationships between processes and the spatial outcomes they produce.
Rules & Requirements

Prerequisites: Computer literacy, some programming background may help, but is not required, as all necessary skills will be covered in the class

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of seminar per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

Instructor: O'Sullivan

GEOG C241 Glaciology 4 Units
A review of the mechanics of glacial systems, including formation of ice masses, glacial flow mechanisms, subglacial hydrology, temperature and heat transport, global flow, and response of ice sheets and glaciers. We will use this knowledge to examine glaciers as geomorphologic agents and as participants in climate change.
Rules & Requirements

Prerequisites: Graduate standing or consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

Instructor: Cuffey

Formerly known as: 241

Also listed as: EPS C242

GEOG 244 Complex Environmental Systems 3 Units
Applying a complex-systems approach to environmental problems can yield valuable insight into risk, potential drivers of change, likely outcomes of perturbation, and whether it is even possible to forecast or manage system behavior. This course explores complex-systems theory and applications in geography, ecology, and earth science. Case studies include climate change, coupled human-environmental systems, vegetation community change, river networks, forest fires, earthquakes, and peatlands.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of seminar per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

Instructor: Larsen

GEOG 246 Geomorphology of California 4 Units
Numerous tectonic and Earth surface processes act in concert to produce the physical landscapes of our planet. This course examines three major regions of California (the Sierra Nevada, the Basin and Range, and the Southern Coast Ranges) as specific case studies for demonstrating how landscapes can be understood using concepts from tectonics, geomorphology, and geography. Two four-day field trips and preparatory readings for them will illuminate the integrated action of tectonics, geologic structure and lithology, drainage network development, hydraulics, soil production, hillslope transport, fluvial transport, aeolian transport, and glacial/perigicial processes. A term project will be required.
Rules & Requirements

Prerequisites: Graduate standing in either geography or earth and planetary science and consent of instructor. Undergraduates need consent of instructor and 140A-140B or 140B and Earth and Planetary Science 117

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 4 hours of seminar per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

Instructor: Cuffey

GEOG 249 Spatiotemporal Data Analysis in the Climate Sciences 3 Units
This graduate seminar teaches objective techniques for spatiotemporal data analysis focusing primarily on Empirical Orthogonal Function (EOF) analysis and its derivatives. The context will be climate data analysis, but the technique is readily translatable to other fields. The goal is to get the student sufficiently comfortable with the technique so they can use it in their research.
Rules & Requirements

Prerequisites: A first course in linear algebra. Access to MATLAB

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of seminar per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

Instructor: Chiang

GEOG C250 Seminar in Sociology of Forest and Wildland Resources 3 Units
Individual projects and group discussions concerning social constraints to, and effects of, natural resource planning and management. Application of sociological theories to problems of managing wildland ecosystems. Students will examine topics of individual interest related to the management of wildland uses. Enrollment limited.
Rules & Requirements

Prerequisites: Consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

Instructor: Fortmann

Also listed as: ESPM C255

GEOG 251 Topics in Cultural Geography 4 Units
Research seminar on selected topics in cultural geography.
Rules & Requirements

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of seminar per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

Instructor: Groth

GEOG 252 Topics in Economic Geography 4 Units
Research seminar on selected topics in economic geography.
Rules & Requirements

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of seminar per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

Instructors: Hsing, Watts

GEOG 253 Topics in Urban Geography 4 Units
Research seminar on selected topics in urban geography.
Rules & Requirements

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of seminar per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

Instructors: Groth, Hsing

GEOG 255 Topics in Political Geography 4 Units
Research seminar on selected topics in political geography.
Rules & Requirements

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of seminar per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

Instructors: Hart, Kosek

GEOG 257 Topics in Climatology 4 Units
Research seminar on selected topics in climatology.
Rules & Requirements

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of seminar per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

Instructor: Chiang

GEOG 260 Topics in Biogeography 4 Units
Research seminar on selected topics in biogeography.
Rules & Requirements

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of seminar per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

Instructor: Byrne

GEOG 279 Statistics and Multivariate Data Analysis for Research 3 Units
An introduction to advanced statistical methods for research. Topics include hypothesis testing, distribution fitting, ANOVA and MANOVA, PCA, cluster analysis, ordination, discriminant analysis, regression, time series analyses, causality, and data mining techniques. Students will complete assignments that use real datasets and will gain feedback in working with their own datasets.
Rules & Requirements

Prerequisites: Basic probability/statistics; familiarity with MATLAB or other programming is helpful but not required

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

Instructor: Larsen

GEOG 280 Advanced Field Study in Geography 3 - 7 Units
All day Saturday. Each additional unit requires four hours of field work per week. Extended field project required.
Rules & Requirements

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 1 hour of lecture and 11 hours of fieldwork per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

GEOG 282 Geographic Information Systems: Applications in Geographical Research 4 Units
This course introduces graduate students to a range of applications of Geographic Information Systems (GIS) in geographical research, and theoretical considerations of the meaning, strengths, and limitations of the methods. We first review, in general, how geographic variables can be represented in a database. This leads to an extended discussion of the application of GIS methods to a variety of problems in physical and human geography, using topographic data, census data, and other sources, manipulated by widely used GIS software. Students build skills and understanding through work on example problems. Finally, the broad question of how GIS represents geographic variables, and the strengths and limitations of the technique, are re-visited using perspective gained from examples. Students will be expected to elaborate these issues in the context of their own research programs.
Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

GEOG 295 Geography Colloquium 1 Unit
Invited lectures on current research and field work.
Rules & Requirements

Prerequisites: Required of all graduate students not yet advanced to candidacy

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 1.5 hours of lecture per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Offered for satisfactory/unsatisfactory grade only.

GEOG 296 Directed Dissertation Research 1 - 12 Units
Rules & Requirements

Prerequisites: Advancement to Ph.D. candidacy

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 0 hours of independent study per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Offered for satisfactory/unsatisfactory grade only.

GEOG N296 Directed Dissertation Research 1 - 4 Units
Rules & Requirements

Prerequisites: Advancement to Ph.D. candidacy

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Summer:
6 weeks - 1-4 hours of independent study per week
8 weeks - 1-4 hours of independent study per week
10 weeks - 1-4 hours of independent study per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

GEOG 297 Directed Field Studies 1 - 6 Units
Rules & Requirements

Prerequisites: Open to students directly engaged in field studies

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 1-6 hours of fieldwork per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Offered for satisfactory/unsatisfactory grade only.

GEOG 298 Directed Study for Graduate Students 1 - 6 Units
Special tutorial or seminar on selected topics not covered by available courses or seminars.
Rules & Requirements

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 0 hours of independent study per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: The grading option will be decided by the instructor when the class is offered.

GEOG 299 Individual Research 1 - 8 Units
Individual research for graduate students in consultation with staff member.
Rules & Requirements

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 0 hours of independent study per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

GEOG N299 Individual Research 1 - 4 Units
Individual research for graduate students in consultation with staff member.
Rules & Requirements

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Summer:
6 weeks - 1-4 hours of independent study per week
8 weeks - 1-4 hours of independent study per week

Additional Details

Subject/Course Level: Geography/Graduate

Grading: Letter grade.

GEOG 301 Professional Training: Teaching Practice 1 - 4 Units
Rules & Requirements

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 0 hours of independent study per week

Additional Details

Subject/Course Level: Geography/Professional course for teachers or prospective teachers

Grading: Offered for satisfactory/unsatisfactory grade only.

GEOG C301 Communicating Ocean Science 4 Units
For graduate students interested in improving their ability to communicate their scientific knowledge by teaching ocean science in elementary schools or science centers/aquariums. The course will combine instruction in inquiry-based teaching methods and learning pedagogy with six weeks of supervised teaching experience in a local school classroom or the Lawrence Hall of Science with a partner. Thus, students will practice communicating scientific knowledge and receive mentoring on how to improve their presentations.
Rules & Requirements

Prerequisites: One course in introductory biology, geology, chemistry, physics, or marine science required and interest in ocean science,junior, senior, or graduate standing; consent of instructor required for sophomores

Hours & Format

Fall and/or spring: 15 weeks - 2.5 hours of lecture, 1 hour of discussion, and 2 hours of fieldwork per week

Additional Details

Subject/Course Level: Geography/Professional course for teachers or prospective teachers

Grading: Letter grade.

Instructor: Ingram

Also listed as: EPS C301/INTEGBI C215

GEOG C302 Effective Scientific Communication 3 Units
This course will introduce methods of organizing and delivering oral presentations, initating and organizing manuscripts, and utilizing digital communication methods, such as web-based media. Students will develop effective communication techniques through in-class experience. This class will have an emphasis on the sciences but will be useful and open to graduate students of all disciplines.
Hours & Format

Fall and/or spring: 15 weeks - 2 hours of seminar per week

Additional Details

Subject/Course Level: Geography/Professional course for teachers or prospective teachers

Grading: Letter grade.

Instructors: Resh, Rhew

Also listed as: ESPM C302

GEOG 601 Individual Study for Master's Students 1 - 6 Units
Individual study for comprehensive or language requirements in consultation with the field adviser.
Rules & Requirements

Prerequisites: For candidates for master's degree

Credit Restrictions: Course does not satisfy unit or residence requirements for master's degree.

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 0 hours of independent study per week

Additional Details

Subject/Course Level: Geography/Graduate examination preparation

Grading: Offered for satisfactory/unsatisfactory grade only.

GEOG N601 Individual Study for Master's Students 1 - 3 Units
Individual study for comprehensive or language requirements in consultation with the field adviser.
Rules & Requirements

Prerequisites: For candidates for master's degree

Credit Restrictions: Course does not satisfy unit or residence requirements for master's degree.

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Summer:
6 weeks - 2.5-7.5 hours of independent study per week
8 weeks - 1.5-5.5 hours of independent study per week

Additional Details

Subject/Course Level: Geography/Graduate examination preparation

Grading: Offered for satisfactory/unsatisfactory grade only.

GEOG 602 Individual Study for Doctoral Students 1 - 6 Units
Individual study in consultation with the major field adviser, intended to provide an opportunity for qualified students to prepare themselves for the various examinations required of candidates for the Ph.D.
Rules & Requirements

Prerequisites: For candidates for Ph.D

Credit Restrictions: Course does not satisfy unit or residence requirements for doctoral degree.

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 0 hours of independent study per week

Additional Details

Subject/Course Level: Geography/Graduate examination preparation

Grading: Offered for satisfactory/unsatisfactory grade only.