Geography

Bachelor of Arts (BA)

The undergraduate major in Geography is unusually broad and diverse, including the study of cultural, economic, political, historical, biophysical, urban and regional geography as well as cartography, quantitative methods, Geographical Information Systems (GIS), remote sensing and fieldwork. Backgrounds in the natural and social sciences, history, and statistical methods may be useful to the geography major, with the mix and emphasis depending on the student's particular interests. Lower-division requirements ensure that all students gain a broad understanding of the discipline, while upper-division requirements are structured to allow students to specialize in the areas of their greatest interest.

Declaring the Major

Students may declare the Geography major after they have completed two of the three lower division requirements, completed at least 30 units, have a C (2.0) cumulative grade point average (GPA), and no prior infraction of the Undergraduate Code of Ethics and Climate Standard (http://geography.berkeley.edu/undergrad/program.php) . Students should declare by the end of their sophomore year at Berkeley or by the start of their second semester if they are a transfer student. To declare, see the Student Academic Advisor to obtain a "Petition to Declare a Major" and a Departmental Information Sheet. These should be turned in with an unofficial transcript (showing UC Berkeley or community college work completed).

Honors Program

Students with an overall GPA of 3.5 or higher on all work completed at the University, and an average of 3.5 in courses taken in the Geography Department, may apply for the Honors Program, with the consent of a departmental advisor. The application should be made at the beginning of the senior year. A senior in the Honors Program must complete GEOG H195Aand/or GEOG H195B consecutively, in which a thesis is required (usually over two semesters). Any faculty member in the Department may administer an honors course. It is suggested that students approach faculty members with whom they have taken classes about mentorship during junior year. After deciding on the number of units (1-4 units) the student wishes to undertake, the student should see the Student Academic Adviser for a course control number (CCN) and the departmental application. Upon successful completion of the program and graduation, the designation of "with Honors", "with High Honors", or "with Highest Honors" will be noted on the student's transcript and diploma.

Minor Program

The Department offers a Minor in Geography. Upon completion of all the requirements for the minor, students must see the academic adviser to fill out the "Confirmation of Minor Program" petition. Students should plan on filing this petition with the adviser during the finals week of the semester in which the last course is taken.

In addition to the University, campus, and college requirements, listed on the College Requirements tab, students must fulfill the below requirements specific to their major program.

General Guidelines

1. All courses taken to fulfill the major requirements below must be taken for graded credit, other than courses listed which are offered on a *Pass/No Pass* basis only. Other exceptions to this requirement are noted as applicable.
2. No more than one upper-division course may be used to simultaneously fulfill requirements for a student's major and minor programs, with the exception of minors offered outside of the College of Letters and Science.
3. A minimum grade point average (GPA) of 2.0 must be maintained in both upper- and lower-division courses used to fulfill the major requirements.

For information regarding residence requirements and unit requirements, please see the College Requirements tab.

Lower-division Requirements (3 courses) [1]

Select one course from each of the following groups:	
Basic Physical Geography	
GEOG 1	Global Environmental Change (or equivalent)
GEOG 40	Introduction to Earth System Science (or equivalent)
World Geography	
GEOG 10	World Regions, Peoples, and States (or equivalent)
GEOG 20	Globalization (or equivalent)
GEOG 31	Justice, Nature, and the Geographies of Identity (or equivalent)
GEOG 35	Global Ecology and Development (or equivalent)
Regional Geographies	
GEOG 50AC	California (or equivalent)
GEOG C32	Introduction to Development (or equivalent)
GEOG 70AC	The Urban Experience (or equivalent)

[1] Transfer students who have had introductory courses elsewhere should consult with the staff academic adviser in order to avoid repeating lower division work.

Upper-division Requirements

Students select either the 5-2-1 Option or the 4-2-2 Option for fulfilling upper-division major requirements.

5-2-1 Option

Select eight upper-division courses:
Five courses from one specialty group (see below)
Two courses from the other specialty group (see below)
One methodology course (see below)

4-2-2 Option

Select eight upper-division courses:
Four courses from one specialty group (see below)
Two courses from the other specialty group (see below)
Two methodology courses (see below)

Specialty Groups

Earth System Science		
GEOG 109	Prehistoric Agriculture	4
GEOG 137	Top Ten Global Environmental Problems	4
GEOG C139	Atmospheric Physics and Dynamics	3
GEOG 140A	Physical Landscapes: Process and Form [1]	4
GEOG 142	Climate Dynamics	4
GEOG 143	Global Change Biogeochemistry	4
GEOG 144	Principles of Meteorology	3
GEOG C145	Geological Oceanography	4
GEOG C146	Communicating Ocean Science	4
GEOG 148	Biogeography	4
GEOG 171	Special Topics in Physical Geography	3
GEOG 175	Undergraduate Seminars	4
Economy, Culture, & Society		
GEOG 109	Prehistoric Agriculture	4
GEOG C110	Course Not Available [1]	4
GEOG C112	History of Development and Underdevelopment	4
GEOG 123	Postcolonial Geographies	4
GEOG 125	The American City	4
GEOG 130	Food and the Environment [1]	4
GEOG 138	Global Environmental Politics	4
GEOG C157	Central American Peoples and Cultures	4
GEOG 159AC	The Southern Border	4
GEOG C160A	American Cultural Landscapes, 1600 to 1900	4
GEOG C160B	American Cultural Landscapes, 1900 to Present	4
GEOG 164	The Geography of Economic Development in China	4
GEOG 170	Special Topics in Geography	3
GEOG 172	Topics in Social Geography	4
GEOG 173A	Cross-listed Topics in Human Geography	1-4
GEOG 175	Undergraduate Seminars	4

1 This course required for this specialty group.

2 One of these courses is required from this specialty group.

Methodology courses

GEOG 180	Field Methods for Physical Geography	5
GEOG 181	Urban Field Study	4
GEOG 182	Field Study of Buildings and Cities	3
GEOG 183	Cartographic Representation	5
GEOG 187	Geographic Information Analysis	5
GEOG C188	Geographic Information Systems	4

Students who have a strong interest in an area of study outside their major often decide to complete a minor program. These programs have set requirements and are noted officially on the transcript in the memoranda section, but they are not noted on diplomas.

General Guidelines

1. All courses taken to fulfill the minor requirements below must be taken for graded credit.
2. A minimum of three of the upper-division courses taken to fulfill the minor requirements must be completed at UC Berkeley.
3. A minimum grade point average (GPA) of 2.0 is required for courses used to fulfill the minor requirements.
4. Courses used to fulfill the minor requirements may be applied toward the Seven-Course Breadth Requirement, for Letters and Science students.
5. No more than one upper-division course may be used to simultaneously fulfill requirements for a student's major and minor programs.
6. All minor requirements must be completed prior to the last day of finals during the semester in which you plan to graduate. If you cannot finish all courses required for the minor by that time, please see a College of Letters and Science adviser.
7. All minor requirements must be completed within the unit ceiling. (For further information regarding the unit ceiling, please see the College Requirements tab.)

Minor Requirements

Upper-division Requirements	
Select five upper-division courses	
	At least one course must be selected from the Physical Area, numbered between GEOG 175-GEOG 188
	At least one course must be selected from the Physical Area, numbered between GEOG 109-173
	Students should contact the student academic adviser to obtain a list of courses being offered each semester, which fall into these designated areas.

Undergraduate students in the College of Letters and Science must fulfill the following requirements in addition to those required by their major program.

For detailed lists of courses that fulfill college requirements, please see the College of Letters and Sciences (http://guide.berkeley.edu/archive/2014-15/undergraduate/colleges-schools/letters-science) page in this bulletin.

Entry Level Writing

All students who will enter the University of California as freshmen must demonstrate their command of the English language by fulfilling the Entry Level Writing Requirement. Fulfillment of this requirement is also a prerequisite to enrollment in all reading and composition courses at UC Berkeley.

American History and American Institutions

The American History and Institutions requirements are based on the principle that a U.S. resident graduated from an American university should have an understanding of the history and governmental institutions of the United States.

American Cultures

American Cultures is the one requirement that all undergraduate students at Cal need to take and pass in order to graduate. The requirement offers an exciting intellectual environment centered on the study of race, ethnicity and culture of the United States. AC courses offer students

opportunities to be part of research-led, highly accomplished teaching environments, grappling with the complexity of American Culture.

Quantitative Reasoning

The Quantitative Reasoning requirement is designed to ensure that students graduate with basic understanding and competency in math, statistics, or computer science. The requirement may be satisfied by exam or by taking an approved course.

Foreign Language

The Foreign Language requirement may be satisfied by demonstrating proficiency in reading comprehension, writing, and conversation in a foreign language equivalent to the second semester college level, either by passing an exam or by completing approved course work.

Reading and Composition

In order to provide a solid foundation in reading, writing and critical thinking the College requires two semesters of lower division work in composition. Students must complete a first-level reading and composition course by the end of their second semester and a second-level course by the end of their fourth semester.

Breadth Requirements

The undergraduate breadth requirements provide Berkeley students with a rich and varied educational experience outside of their major program. As the foundation of a liberal arts education, breadth courses give students a view into the intellectual life of the University while introducing them to a multitude of perspectives and approaches to research and scholarship. Engaging students in new disciplines and with peers from other majors, the breadth experience strengthens interdisciplinary connections and context that prepares Berkeley graduates to understand and solve the complex issues of their day.

Unit Requirements

- 120 total units, including at least 60 L&S units
- Of the 120 units, 36 must be upper division units
- Of the 36 upper division units, 6 must be taken in courses offered outside your major department

Residence Requirements

For units to be considered in "residence," you must be registered in courses on the Berkeley campus as a student in the College of Letters and Science. Most students automatically fulfill the residence requirement by attending classes here for four years. In general, there is no need to be concerned about this requirement, unless you go abroad for a semester or year or want to take courses at another institution or through University Extension during your senior year. In these cases, you should make an appointment to see an adviser to determine how you can meet the Senior Residence Requirement.

Note: Courses taken through UC Extension do not count toward residence.

Senior Residence Requirement

After you become a senior (with 90 semester units earned toward your B.A. degree), you must complete at least 24 of the remaining 30 units in residence in at least two semesters. To count as residence, a semester must consist of at least 6 passed units. Intercampus Visitor, EAP, and UC Berkeley-Washington Program (UCDC) units are excluded.

You may use a Berkeley summer session to satisfy one semester of the Senior Residence Requirement, provided that you successfully complete 6 units of course work in the Summer Session and that you have been enrolled previously in the College.

Modified Senior Residence Requirement

Participants in the UC Education Abroad Program (EAP) or the UC Berkeley-Washington Program (UCDC) may meet a Modified Senior Residence Requirement by completing 24 (excluding EAP) of their final 60 semester units in residence. At least 12 of these 24 units must be completed after you have completed 90 units.

Upper Division Residence Requirement

You must complete in residence a minimum of 18 units of upper division courses (excluding EAP units), 12 of which must satisfy the requirements for your major.

Learning Goals for the Major

1. Spatial, holistic thinking at the intersections of society, space, and nature:
    a. Phenomena in place: Explain the spatial dimensions (location, place, landscape, region, and territory) of human life and the global environment—how human and earth science phenomena “take their place” on the surface of the earth
    b. Earth systems: Comprehend how the Earth functions as a complex system of interacting components and how this system applies to and is affected by humanity
    c. Scales of space and time: Understand processes operating at different spatial and temporal scales in the earth system and in human histories
    d. Nature and society: Recognize natural resource flows through human systems and identify social constructions of nature and vulnerabilities to natural disasters
    e. Interdisciplinarity: Combine insights from the natural sciences, social sciences, and humanities to better understand the problems of the increasingly interconnected and ecologically fragile world
2. Addressing diversity in both human and physical geography:
    a. Peoples and places: Discuss, interpret, and explain differences of wealth, power, health, and well-being between and within societies, and the processes that create these patterns
    b. Physical processes: Discuss, interpret, and explain the diversity of—and the processes responsible for—the landforms, climates, and ecosystems that constitute our planet’s physical landscapes
    c. Reading landscapes: Deduce questions and hypotheses through clues in material landscapes
3. Analysis and application for students who choose the Economy, Culture, and Society track:
    a. Role of Space: Understand the function of boundaries, territories, places, networks, and other spatial forms in the workings of human societies.

   b. Power and landscapes: Understand the projection, protection, and contestation of power through the production of ideas, cultures, empires, and spatial forms
   c. Roles of cities: Grasp the roles and forms of cities as records and motors of modern life, and the interactions of urban areas with hinterlands and global networks
   d. Food systems: Compare and contrast agrarian and industrial food supply systems around the world
   e. Society-environment interactions: Understand the mutual influences and ramifications of biophysical and social processes in the dynamics of societies at scales from the local to the global
4. Analysis and application for students who choose the Earth Systems Science track:
   a. Earth system science: Analyze interconnected environmental systems with process-based geophysical, geochemical, and biological sciences in the context of current social environmental problems
   b. Modeling: Construct models of the earth as a system of interconnected components, highlighting forcings and feedbacks
   c. Experiments: Formulate and apply scientific hypotheses and devise tests for them
   d. Science and society: Analyze and evaluate the role of science in shaping social forces, and being shaped by them
5. Application of basic skills in research, knowledge of literature, analysis, and communication:
   a. Write clearly: Demonstrate ability to focus and elaborate on chosen topics
   b. Read critically: Critically analyze and assess arguments in professional journals, public media, and advocacy literature
   c. Empirical plus theoretical: Produce work with robust empirical research (that locates, interprets, and puts together relevant and reliable sources of information) as well as intellectual and theoretical rigor
   d. Use of mapping: Understand the production, interpretation, and use of mapping in all its forms and scales
   e. Applying quantitative skills: Apply basic quantitative skills such as statistics, algebra, and interpreting graphs
   f. Analytical ability: Demonstrate analytical ability: including the ability to identify questions, differentiate descriptions from explanations, make connections between empirical observations and arguments, and differentiate between competing explanations of a given phenomenon
6. Lifetime skills:
   a. Continuing concern: Show continuing concern, curiosity, and zeal for geography and for applying geographical understanding
   b. Representing geography: Represent the usefulness of geography and geographical points of view to—depending on the circumstances—prospective employers, educators, policy makers, resource managers, developers, engineers, the public, and acquaintances

The Student Academic Adviser, Marjorie Ensor, helps students plan and execute their coursework in the major program and answer questions concerning requirements and course substitutions.

Professors Laurel Larsen and Michael Johns are the Designated Undergraduate Faculty Advisors for 2014-2015. They may be consulted on any other questions concerning the major during their office hours or by special appointment.

Students are also encouraged to seek substantive advice on academic matters from other faculty who share their interests or with whom they have had classes.

Information on general Letters and Science requirements should be obtained from a College advisor in the L&S office in 206 Evans Hall.

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.