

# Geography

UC Berkeley Geography offers the highest quality graduate training for future scholars and teachers at the collegiate level, as well as for those going into professional careers in government, NGOs and consulting. The program is divided into three major areas: Development & Environment, Local & Global Relations, and Global Environmental Change. Within these domains, a wide range of faculty interests are represented, such as political ecology, economic geography, cultural geography, post-colonial studies, urban studies, geography of race and gender, climatology, geomorphology, remote sensing, and geographic information systems (GIS). Faculty members come with a broad spectrum of regional specialties as well, including Africa, South and East Asia, the Arctic, the Everglades and Mississippi Delta, Brazil, the Caribbean, and Latin America. The faculty has been expanded in recent years to include a number of affiliates in other departments with expertise in such fields as GIS, gender and social movements, natural resources, fluvial geomorphology, environmental engineering, landscape ecology, and urban planning.

## Admission to the University

### Minimum Requirements for Admission

The following minimum requirements apply to all graduate programs and will be verified by the Graduate Division:

1. A bachelor's degree or recognized equivalent from an accredited institution;
2. A grade point average of B or better (3.0);
3. If the applicant comes from a country or political entity (e.g., Quebec) where English is not the official language, adequate proficiency in English to do graduate work, as evidenced by a TOEFL score of at least 90 on the iBT test, 570 on the paper-and-pencil test, or an IELTS Band score of at least 7 (note that individual programs may set higher levels for any of these); and
4. Sufficient undergraduate training to do graduate work in the given field.

### Applicants Who Already Hold a Graduate Degree

The Graduate Council views academic degrees not as vocational training certificates, but as evidence of broad training in research methods, independent study, and articulation of learning. Therefore, applicants who already have academic graduate degrees should be able to pursue new subject matter at an advanced level without need to enroll in a related or similar graduate program.

Programs may consider students for an additional academic master's or professional master's degree only if the additional degree is in a distinctly different field.

Applicants admitted to a doctoral program that requires a master's degree to be earned at Berkeley as a prerequisite (even though the applicant already has a master's degree from another institution in the same or a closely allied field of study) will be permitted to undertake the second master's degree, despite the overlap in field.

The Graduate Division will admit students for a second doctoral degree only if they meet the following guidelines:

1. Applicants with doctoral degrees may be admitted for an additional doctoral degree only if that degree program is in a general area of

knowledge distinctly different from the field in which they earned their original degree. For example, a physics PhD could be admitted to a doctoral degree program in music or history; however, a student with a doctoral degree in mathematics would not be permitted to add a PhD in statistics.

2. Applicants who hold the PhD degree may be admitted to a professional doctorate or professional master's degree program if there is no duplication of training involved.

Applicants may apply only to one single degree program or one concurrent degree program per admission cycle.

## Required Documents for Applications

1. **Transcripts:** Applicants may upload *unofficial* transcripts with your application for the departmental initial review. *If the applicant is admitted*, then *official* transcripts of all college-level work will be required. Official transcripts must be in sealed envelopes as issued by the school(s) attended. If you have attended Berkeley, upload your unofficial transcript with your application for the departmental initial review. *If you are admitted*, an official transcript with evidence of degree conferral *will not* be required.
2. **Letters of recommendation:** Applicants may request online letters of recommendation through the online application system. Hard copies of recommendation letters must be sent directly to the program, not the Graduate Division.
3. **Evidence of English language proficiency:** All applicants from countries or political entities in which the official language is not English are required to submit official evidence of English language proficiency. This applies to applicants from Bangladesh, Burma, Nepal, India, Pakistan, Latin America, the Middle East, the People's Republic of China, Taiwan, Japan, Korea, Southeast Asia, most European countries, and Quebec (Canada). However, applicants who, at the time of application, have already completed at least one year of full-time academic course work with grades of B or better at a US university may submit an official transcript from the US university to fulfill this requirement. The following courses will not fulfill this requirement:
  - courses in English as a Second Language,
  - courses conducted in a language other than English,
  - courses that will be completed after the application is submitted, and
  - courses of a non-academic nature.

If applicants have previously been denied admission to Berkeley on the basis of their English language proficiency, they must submit new test scores that meet the current minimum from one of the standardized tests.

## Where to Apply

Visit the Berkeley Graduate Division application page (<http://grad.berkeley.edu/admissions/apply>).

## Curriculum

GEOG 200A/200B	Contemporary Geographic Thought	5
GEOG 295	Geography Colloquium	1
Electives, as per specialized study list		

All students take GEOG 200A in their first year. This course is designed to help each student to see, think, and write geographically; to learn

how to make and to judge arguments; and to prepare a thesis proposal. Students with a Human Geography focus will also take GEOG 200B following GEOG 200A. Those with an Earth Systems Science focus are exempt from GEOG 200B (will instead take a course identified by their faculty adviser). All students in the doctoral program must take at least 12 units every semester (primarily in the form of appropriate graduate seminars) before taking the qualifying exam and advancing to candidacy. In addition, students must enroll in the Geography Colloquium (GEOG 295). This is a weekly colloquium (known as the Tea Talk) which features invited speakers.

By the end of the third year, students entering with a BA or BS only must hand in an analytical paper that would be suitable—in length and in quality—for submission to an academic or scientific journal. The analytical paper may be an investigation of an intellectual problem in the form of an original synthesis of secondary literature; it may advance a new idea, or question an existing theory or notion, by assembling information that already exists in the literature; or it may use original information gathered from archives or in the field. The student should have a proposal for the paper by the end of the first year, and must be in constant and close consultation with his or her main adviser. The adviser will determine the appropriate format and length of the paper. The paper must be handed in, and approved by the main adviser, no later than a month before the qualifying exam. A copy of the paper with the adviser's approval should be turned in to the student affairs officer. Students entering with an MA are exempt from the analytical paper requirement.

Prior to taking the qualifying exam, all students must prepare a preliminary dissertation prospectus of between five and ten pages for their exam committee.

The qualifying exam (the "orals") must be taken by the end of the third year, although it is recommended that students entering with a master's degree take it by the end of their second year. The exam is based on a discussion of three broad geographic fields built around bibliographies produced in consultation with the examining committee.

Immediately after passing the orals, a student applies to the Graduate Division for Advancement to Candidacy for the PhD.

As part of their training, all students will be expected to serve as graduate student instructors (GSIs) for at least one semester.

Before starting dissertation research, each student must have a dissertation prospectus meeting—during which the student discusses a written research proposal—with at least two members of the exam committee. The PhD dissertation is written under the supervision of a committee of three University faculty members, one of whom must be from outside the Geography Department and a member of the Berkeley Academic Senate. Upon final acceptance of the dissertation, the degree of PhD is awarded. It is expected that the student will complete the PhD by the end of the sixth year in the program.

All students are expected to give an exit talk the semester they are filing their dissertation.

All students must give the department a copy of their thesis before their final report to the Graduate Division will be signed.

## Geography

### GEOG 200A Contemporary Geographic Thought 5 Units

Terms offered: Fall 2018, Fall 2017, Fall 2016

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. The fall semester class also serves to introduce students to the practices and expectations of scholarly work more generally, including professionalization, publishing, and public speaking.

Contemporary Geographic Thought: Read More [+]

#### Rules & Requirements

**Prerequisites:** Required of all first year graduate students

#### Hours & Format

**Fall and/or spring:** 15 weeks - 5 hours of seminar per week

#### Additional Details

**Subject/Course Level:** Geography/Graduate

**Grading:** Letter grade.

Contemporary Geographic Thought: Read Less [-]

## GEOG 200B Contemporary Geographic Thought 2 (Geographical Difference and Differentiation) 5 Units

Terms offered: Spring 2018, Spring 2016, Spring 2015

'Geographical Difference/Differentiation' is a 5 unit course with Seminar and Workshop components. The Seminar reads canonical work in social theory against contemporary Geography, including metropolitan traditions of critique of capitalism, urbanization, space and time, discipline-biopower-sovereignty, and the now; Southern traditions of agrarian, subaltern and materialist postcolonial studies; Black radical and oceanic traditions that stretch Geography in new ways; and finally, geo-graphy as a form of Earth-writing concerned with the unraveling subject, ruined landscapes mixtures of form. The Workshop runs in parallel on particular weeks, focusing on geographic problematization and the research process.

Contemporary Geographic Thought 2 (Geographical Difference and Differentiation): [Read More](#) [+]

### Rules & Requirements

**Prerequisites:** Required of all first-year graduate students

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of seminar and 2 hours of workshop per week

### Additional Details

**Subject/Course Level:** Geography/Graduate

**Grading:** Letter grade.

Contemporary Geographic Thought 2 (Geographical Difference and Differentiation): [Read Less](#) [-]

## GEOG 203 Nature and Culture: Social Theory, Social Practice, and the Environment 4 Units

Terms offered: Fall 2016, Fall 2011, Fall 2008

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. Nature and Culture: Social Theory, Social Practice, and the Environment: [Read More](#) [+]

### 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

Nature and Culture: Social Theory, Social Practice, and the Environment: [Read Less](#) [-]

## GEOG 214 Development Theories and Practices 4 Units

Terms offered: Spring 2011, Spring 2010, Spring 2009

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.

Development Theories and Practices: [Read More](#) [+]

### 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

Development Theories and Practices: [Read Less](#) [-]

## GEOG 215 Seminar in Comparative and International Development 4 Units

Terms offered: Spring 2017, Spring 2015, Fall 2010

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.

Seminar in Comparative and International Development: Read More [+] **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

Seminar in Comparative and International Development: Read Less [-]

## GEOG 220 Capital, Value, and Scale 4 Units

Terms offered: Spring 2013, Spring 2009, Spring 2007

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

Capital, Value, and Scale: Read More [+]

**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

Capital, Value, and Scale: Read Less [-]

## GEOG 221 Speculative World-Building: Games and Simulation 4 Units

Terms offered: Spring 2018

This class will introduce the theory, background, and practice of (analog) gaming, and simulation, or, more generally speculative world-building. These activities are increasingly important in contemporary culture, and also in science, policy, business, planning, and government, in situations where understanding how the world works, how the world might work, or how things might work differently are important. In addition to approaching games as objects of study, students will design new games on topics of their choice, alone or in groups, as a practical component of this class.

Speculative World-Building: Games and Simulation: Read More [+]

**Objectives Outcomes**

**Course Objectives:** This class is a revised version of a class called 'Spatial simulation modeling' (Geography 228), but replaces computer simulation with board games as a vehicle for exploring how to abstractly represent processes and relations in the world. The aim is to develop an understanding of practices of 'world-building', using board games as an accessible point of entry to these practices. To do computer simulation requires learning how to program ('to code' as people insist of calling it today), which is a fine ambition but is distinct from the much more fundamental practices of abstraction, quantification, systems analysis, and so forth that underpin building simulation models. Working with board games instead of computational models will help us get to the heart of those practices a lot more easily without the distraction of learning to program.

**Student Learning Outcomes:** It is important to note that this is not a game design class; it is not a game theory class; and it is not a cultural studies of games class, although students may learn a little (or even a lot) about all these things, particularly the first. We will look at a lot of games during the semester, as a way to understand games as systems of interacting mechanics, preparatory to student projects which will develop either entirely new games or (probably more likely) develop variants of existing games to align the game's model of the world more closely with aspects they wish to explore.

**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:** OSullivan

Speculative World-Building: Games and Simulation: Read Less [-]

## GEOG 228 Spatial Simulation Modeling 4 Units

Terms offered: Spring 2015

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.

Spatial Simulation Modeling: Read More [\[+\]](#)

### 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

Spatial Simulation Modeling: Read Less [\[-\]](#)

## GEOG 230 Economies of Race 4 Units

Terms offered: Not yet offered

This course examines the economy as a domain of social analysis for understanding the black experience. Throughout the course we will examine what forms economic institutions and practices take across the black Diaspora. We will examine the central place of race within capitalist economies, largely overlooked by mainstream economic analyses and unpack its implications for equality in wider capitalist markets, state systems, and policy initiatives. Through historical and ethnographic accounts we will explore how people across the Diaspora cope with crises and inequality, both individually and collectively, and how historical narratives are brought to bear on those methods, and on notions of the future.

Economies of Race: Read More [\[+\]](#)

### 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:** Lewis

Economies of Race: Read Less [\[-\]](#)

## GEOG C241 Glaciology 4 Units

Terms offered: Spring 2018, Spring 2017, Spring 2015

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.

Glaciology: Read More [\[+\]](#)

### 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

Glaciology: Read Less [\[-\]](#)

## GEOG 244 Complex Environmental Systems 3 Units

Terms offered: Spring 2016, Spring 2014, Spring 2013

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.

Complex Environmental Systems: Read More [\[+\]](#)

### 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

Complex Environmental Systems: Read Less [\[-\]](#)



## GEOG 246 Geomorphology of California 4 Units

Terms offered: Fall 2011, Fall 2009, Fall 2006

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/periglacial processes. A term project will be required.

Geomorphology of California: [Read More](#) [+]

### 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 without restriction.

### 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

Geomorphology of California: [Read Less](#) [-]

## GEOG C246 Transboundary Water Conflict Resolution: The Israeli/Arab Case 3 Units

Terms offered: Fall 2018

This course will cover technological, legal, and institutional mechanisms to resolve the water conflict between Israel and its Arab neighbors, emphasizing the agricultural, industrial, environmental and urban sectors that compete over this resource. Students will examine the distribution of available water resources in Israel among different users and sectors as well as between Israel and its neighbors. Transboundary Water Conflict Resolution: The Israeli/Arab Case: [Read More](#) [+]

### 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:** Fischhendler

**Also listed as:** DEVP C246

Transboundary Water Conflict Resolution: The Israeli/Arab Case: [Read Less](#) [-]

## GEOG 249 Spatiotemporal Data Analysis in the Climate Sciences 3 Units

Terms offered: Fall 2008

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.

Spatiotemporal Data Analysis in the Climate Sciences: [Read More](#) [+]

### 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

Spatiotemporal Data Analysis in the Climate Sciences: [Read Less](#) [-]

## GEOG C250 Seminar in Sociology of Forest and Wildland Resources 3 Units

Terms offered: Fall 2014, Spring 2014, Fall 2013, Fall 2012

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.

Seminar in Sociology of Forest and Wildland Resources: [Read More](#) [+]

### 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

Seminar in Sociology of Forest and Wildland Resources: [Read Less](#) [-]

## GEOG 251 Topics in Cultural Geography 4 Units

Terms offered: Fall 2017, Spring 2015, Fall 2013

Research seminar on selected topics in cultural geography.

Topics in Cultural Geography: [Read More](#) [+]

### Rules & Requirements

**Repeat rules:** Course may be repeated for credit without restriction.

### 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

Topics in Cultural Geography: [Read Less](#) [-]

## GEOG 252 Topics in Economic Geography 4 Units

Terms offered: Spring 2016, Spring 2015, Fall 2013

Research seminar on selected topics in economic geography.

Topics in Economic Geography: [Read More](#) [+]

### Rules & Requirements

**Repeat rules:** Course may be repeated for credit without restriction.

### 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

Topics in Economic Geography: [Read Less](#) [-]

## GEOG 253 Topics in Urban Geography 4 Units

Terms offered: Spring 2014, Fall 2012, Spring 2012

Research seminar on selected topics in urban geography.

Topics in Urban Geography: [Read More](#) [+]

### Rules & Requirements

**Repeat rules:** Course may be repeated for credit without restriction.

### 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

Topics in Urban Geography: [Read Less](#) [-]

## GEOG 254 Topics in GIS 4 Units

Terms offered: Fall 2016

Research seminar on selected topics in GIS.

Topics in GIS: [Read More](#) [+]

### Rules & Requirements

**Repeat rules:** Course may be repeated for credit without restriction.

### 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:** O'Sullivan

Topics in GIS: [Read Less](#) [-]

## GEOG 255 Topics in Political Geography 4 Units

Terms offered: Spring 2018, Spring 2016, Fall 2015

Research seminar on selected topics in political geography.

Topics in Political Geography: [Read More](#) [+]

### Rules & Requirements

**Repeat rules:** Course may be repeated for credit without restriction.

### 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

Topics in Political Geography: [Read Less](#) [-]

## **GEOG 257 Topics in Climatology 4 Units**

Terms offered: Fall 2018, Fall 2017, Fall 2016

Research seminar on selected topics in climatology.

Topics in Climatology: [Read More](#) [+]

### **Rules & Requirements**

**Repeat rules:** Course may be repeated for credit without restriction.

### **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

Topics in Climatology: [Read Less](#) [-]

## **GEOG 260 Topics in Biogeography 4 Units**

Terms offered: Spring 2015, Spring 2013, Fall 2012

Research seminar on selected topics in biogeography.

Topics in Biogeography: [Read More](#) [+]

### **Rules & Requirements**

**Repeat rules:** Course may be repeated for credit without restriction.

### **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

Topics in Biogeography: [Read Less](#) [-]

## **GEOG 279 Statistics and Multivariate Data Analysis for Research 3 Units**

Terms offered: Fall 2018, Fall 2017, Spring 2015

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.

Statistics and Multivariate Data Analysis for Research: [Read More](#) [+]

### **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

Statistics and Multivariate Data Analysis for Research: [Read Less](#) [-]

## **GEOG 280 Advanced Field Study in Geography 3 - 7 Units**

Terms offered: Fall 2018, Fall 2017, Fall 2016

All day Saturday. Each additional unit requires four hours of field work per week. Extended field project required.

Advanced Field Study in Geography: [Read More](#) [+]

### **Rules & Requirements**

**Repeat rules:** Course may be repeated for credit without restriction.

### **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.

Advanced Field Study in Geography: [Read Less](#) [-]



## GEOG 282 Geographic Information Systems: Applications in Geographical Research 4 Units

Terms offered: Spring 2009

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.

Geographic Information Systems: Applications in Geographical Research: Read More [+]

### 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.

Geographic Information Systems: Applications in Geographical Research: Read Less [-]

## GEOG 285 Topics in Earth System Remote Sensing 3 Units

Terms offered: Spring 2018, Spring 2016

Questions asked about a changing planet are strongly influenced by data collected across a variety of spatial and temporal scales. Remote sensing of globally distributed ecosystems and human landscapes enables the exploration of questions not possible without the extension of those dimensions. This course will focus on developing scalable Earth system research questions using a variety of tools including advanced remote sensing methods, image acquisition including UAV systems, data synthesis and analytical approaches, literature review, progress reporting, and student presentations.

Topics in Earth System Remote Sensing: Read More [+]

### Objectives Outcomes

**Course Objectives:** To develop a better understanding of what questions can be approached across a range of geographical dimensions, and further develop the student's toolbox for exploring those questions and presenting results.

### 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/Graduate

**Grading:** Letter grade.

**Instructor:** Chambers

Topics in Earth System Remote Sensing: Read Less [-]

## GEOG 295 Geography Colloquium 1 Unit

Terms offered: Fall 2018, Spring 2018, Fall 2017

Invited lectures on current research and field work.

Geography Colloquium: Read More [+]

### Rules & Requirements

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

**Repeat rules:** Course may be repeated for credit without restriction.

### Hours & Format

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

### Additional Details

**Subject/Course Level:** Geography/Graduate

**Grading:** Offered for satisfactory/unsatisfactory grade only.

Geography Colloquium: Read Less [-]

## **GEOG 296 Directed Dissertation Research 1 - 12 Units**

Terms offered: Fall 2018, Spring 2018, Fall 2017

Directed Dissertation Research: [Read More](#) [+]

### **Rules & Requirements**

**Prerequisites:** Advancement to Ph.D. candidacy

**Repeat rules:** Course may be repeated for credit without restriction.

### **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.

Directed Dissertation Research: [Read Less](#) [-]

## **GEOG N296 Directed Dissertation Research 1 - 4 Units**

Terms offered: Summer 2018 10 Week Session, Summer 2018 8 Week Session, Summer 2018 Second 6 Week Session

Directed Dissertation Research: [Read More](#) [+]

### **Rules & Requirements**

**Prerequisites:** Advancement to Ph.D. candidacy

**Repeat rules:** Course may be repeated for credit without restriction.

### **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.

Directed Dissertation Research: [Read Less](#) [-]

## **GEOG 297 Directed Field Studies 1 - 6 Units**

Terms offered: Fall 2018, Spring 2018, Fall 2017

Directed Field Studies: [Read More](#) [+]

### **Rules & Requirements**

**Prerequisites:** Open to students directly engaged in field studies

**Repeat rules:** Course may be repeated for credit without restriction.

### **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.

Directed Field Studies: [Read Less](#) [-]

## **GEOG 298 Directed Study for Graduate Students 1 - 6 Units**

Terms offered: Fall 2018, Spring 2018, Fall 2017

Special tutorial or seminar on selected topics not covered by available courses or seminars.

Directed Study for Graduate Students: [Read More](#) [+]

### **Rules & Requirements**

**Repeat rules:** Course may be repeated for credit without restriction.

### **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.

Directed Study for Graduate Students: [Read Less](#) [-]

## **GEOG 299 Individual Research 1 - 8 Units**

Terms offered: Fall 2018, Spring 2018, Fall 2017

Individual research for graduate students in consultation with staff member.

Individual Research: [Read More](#) [+]

### **Rules & Requirements**

**Repeat rules:** Course may be repeated for credit without restriction.

### **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.

Individual Research: [Read Less](#) [-]

## GEOG N299 Individual Research 1 - 4 Units

Terms offered: Summer 2018 First 6 Week Session, Summer 2006 10 Week Session, Summer 2005 10 Week Session

Individual research for graduate students in consultation with staff member.

Individual Research: Read More [\[+\]](#)

### Rules & Requirements

**Repeat rules:** Course may be repeated for credit without restriction.

### 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.

Individual Research: Read Less [\[-\]](#)

## GEOG 301 Professional Training: Teaching Practice 1 - 4 Units

Terms offered: Fall 2018, Spring 2018, Fall 2017

Professional Training: Teaching Practice: Read More [\[+\]](#)

### Rules & Requirements

**Repeat rules:** Course may be repeated for credit without restriction.

### 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.

Professional Training: Teaching Practice: Read Less [\[-\]](#)

## GEOG C301 Communicating Ocean Science 4 Units

Terms offered: Spring 2018, Spring 2017, Spring 2016, Spring 2015, Fall 2014, Spring 2014, Spring 2013

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.

Communicating Ocean Science: Read More [\[+\]](#)

### 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

Communicating Ocean Science: Read Less [\[-\]](#)

## GEOG C302 Effective Scientific Communication 3 Units

Terms offered: Fall 2009, Fall 2007

This course will introduce methods of organizing and delivering oral presentations, initiating 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.

Effective Scientific Communication: Read More [\[+\]](#)

### 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

Effective Scientific Communication: Read Less [\[-\]](#)

## **GEOG 601 Individual Study for Master's Students 1 - 6 Units**

Terms offered: Fall 2018, Spring 2018, Fall 2017

Individual study for comprehensive or language requirements in consultation with the field adviser.

Individual Study for Master's Students: [Read More](#) [+]

### **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 without restriction.

### **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.

Individual Study for Master's Students: [Read Less](#) [-]

## **GEOG N601 Individual Study for Master's Students 1 - 3 Units**

Terms offered: Summer 2009 10 Week Session

Individual study for comprehensive or language requirements in consultation with the field adviser.

Individual Study for Master's Students: [Read More](#) [+]

### **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 without restriction.

### **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.

Individual Study for Master's Students: [Read Less](#) [-]

## **GEOG 602 Individual Study for Doctoral Students 1 - 6 Units**

Terms offered: Fall 2018, Spring 2018, Fall 2017

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.

Individual Study for Doctoral Students: [Read More](#) [+]

### **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 without restriction.

### **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.

Individual Study for Doctoral Students: [Read Less](#) [-]