

Geography

Geography is an inquiry into the patterns and processes that make up the surface of the Earth. It is a broad field of inquiry that, in our department, includes glaciers and climate change, the origins of agriculture and the evolution of plant life, the culture of cities and the dynamics of the global economy.

Such a wide range of themes gives each student great freedom to choose a research topic, develop an intellectual style, and select approaches to gathering evidence and making persuasive arguments. That freedom also includes opportunities to go outside of the department and make use of the tremendous resources of the campus as a whole. Our goal is to help each student find his or her own combination of intellectual rigor, creativity, and independence.

Ph.D. Program in Geography

The program is divided into three major areas:

- Global Development and Political Economy
- Earth System Science
- Geospatial Representation and Analysis

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.

Berkeley students are expected to be independent, and we welcome those who have had professional experience and wish to return to deepen their education. Students are encouraged to range freely through the curriculum and to follow their inspiration where it leads, working in tandem with faculty advisors. Students choose their own mentors, often utilizing two or three faculty in equal measure; these may include faculty affiliates and members from other departments.

While faculty have their own research agendas and teaching specialties, and often collaborate with students, we believe students should march to their own drummer. We expect students to read extensively, develop the necessary research skills, and produce well-crafted thesis and dissertation. Many students publish their findings along the way, as well. 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.

General Admission Requirements for Graduate Study

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 has completed a basic degree 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 on a 9-point scale (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 the 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 who have completed a basic degree from a country or political entity in which the official language is not English are required to submit official evidence of English language proficiency. This applies to institutions 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. Official TOEFL score reports must be sent directly from Educational Test Services (ETS). The institution code for Berkeley is 4833. Official IELTS score reports must be sent electronically from the testing center to University of California, Berkeley, Graduate Division, Sproul Hall, Rm 318 MC 5900, Berkeley, CA 94720. TOEFL and IELTS score reports are only valid for two years.

Where to Apply

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

Additional Departmental Application Requirements

In addition to the information and documents required by the Graduate Division, the Geography Department asks all prospective applicants to include the following materials in their application:

- **Statement of purpose** outlining the applicant's intellectual objectives in her or his graduate career. Students can refer to the Graduate Division Statement of Purpose Guide here: <http://grad.berkeley.edu/admissions/apply/statement-purpose/>
- **Personal history statement.** Students should indicate any challenges, hardships or obstacles they may have overcome. The department would like to know if students have supported themselves through school, if they are a first generation college student, if they took on a leadership position, tutored or mentored underrepresented students, or took advantage of unique opportunities. Students can refer to the Graduate Division Personal Statement Guide here: <http://grad.berkeley.edu/admissions/apply/personal-statement/>
- **Three letters of academic appraisal**, preferably from former instructors.
- **GRE Scores are OPTIONAL during the upcoming Fall 2021 application cycle.** Students who have previously taken or would like to take the GRE are welcome to send their scores with their application, but there will be no disadvantage to students who choose not to submit GRE scores.

- Applicants are asked to list the faculty they have contacted or expect to contact concerning their application, as well as the faculty in the department whose research is of particular interest to them and who they can foresee as a potential advisor.
- Resumes or CVs are optional, but highly recommended.
- Writing samples are optional.

Important Notes:

- The geography department does NOT admit students for a Master's degree. Students may only apply for the Ph.D. program in geography.
- The department does NOT offer admission for spring terms; students may only apply for programs that begin with the fall term.

Questions?

If you have questions regarding your application to the Ph.D. program in geography, please email Sarah Varner, Graduate Student Affairs Officer, at svarner@berkeley.edu.

General Program Outline

First Year Curriculum and Course Enrollment

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 and GEOG 200C following GEOG 200A.

Those with an Earth Systems Science focus are exempt from GEOG 200B and GEOG 200C (these students will 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 which features invited speakers.

Analytic Paper

By the end of the third year, students entering with only a bachelor's degree must hand in a paper that would be suitable—in length and in quality—for submission to an academic or scientific journal. Students entering with a master's degree are exempt from this requirement.

The analytic 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 their 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 less than a month before the qualifying exam. A copy of the paper with the adviser's approval should be turned in to the Graduate Student Affairs Officer.

Dissertation Prospectus

Prior to taking the qualifying exam, all students must prepare a preliminary dissertation prospectus of between five and ten pages for their exam committee. A prospectus is a valuable first step in writing a dissertation, as it requires students to clarify their project and create a plan for carrying out their research. Before students begin their dissertation research, they must have a dissertation prospectus meeting—during which the student discusses their proposal—with at least two members of their QE committee.

Qualifying Exam

The qualifying exam 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 QE, students will apply to the Graduate Division for advancement to candidacy. Advancing to candidacy by the end of the third year qualifies a student for the Dissertation Completion Fellowship (<https://grad.berkeley.edu/policy/degrees-policy/#f31-doctoral-completion-fellowship-dcf>).

Additional Departmental Requirements

- As part of their training, all students will be expected to serve as graduate student instructors (GSIs) for at least one semester.
- Students will be expected to complete an annual review with their first-year mentor or their faculty advisor each year to ensure timely completion of degree requirements.
- All students are expected to give an exit talk during the semester in which they file their dissertation.

Timeline of Degree Conferral

The 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. All students must give the department a copy of their thesis before their final report to the Graduate Division will be signed. Upon final acceptance of the dissertation, the degree of Ph.D. is awarded. It is expected that the student will complete the Ph.D. by the end of the sixth year in the program.

Geography

Expand all course descriptions [+]Collapse all course descriptions [-]

GEOG 200A Contemporary Geographic Thought 5 Units

Terms offered: Fall 2022, Fall 2021, Fall 2020

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 2022, Spring 2021, Spring 2020

'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 200C Foundations in Geographic Thought 5 Units

Terms offered: Spring 2022, Spring 2021

This course is meant as a Foundation in Geography theory. But this course is more about geographic methods of dissolution or abolition than it is about constructing a coherent, systematic body of work founded in a unified body of geographic thought and/or tradition. We will read some texts that are often considered foundational but we will read them with and through people who contested, undermined, and remade them. We will engage with similar undoings of the work of both Geographers and people who have been central to geographic thought. Foundations in Geographic Thought: Read More [\[+\]](#)

Objectives & Outcomes

Course Objectives: The ultimate course goal will be (1) to learn some of the key foundational concepts and approaches central in contemporary geographic thought; (2) to develop the critical skills necessary to splinter, crack, and shatter these foundations and approaches, and finally (3), with the shards, ashes, and remnants collectively reconstruct a form of Geographic thought that might be of some utility for this political moment.

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: Kosek

Foundations in Geographic Thought: 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 205 Black Geographies 4 Units

Terms offered: Fall 2022, Spring 1998, Spring 1997

This graduate seminar explores the inextricable connection between blackness and geography.

Considering Katherine McKittrick's claim that Black geographies are "the terrain of political struggle itself" or where the imperative of a perspective of struggle takes place," we will situate the spatial relations of blackness by placing Black people at the core of spatial production and examine the mechanisms by which this takes place. In this course we ask: what are the limitations and possibilities of traditional geographies? How does Black geographic thought produce wider material and conceptual space for geographic knowledge? How does Geography account for and understand blackness as condition, experience, and imaginary?

Black Geographies: Read More [+]

Objectives & Outcomes

Course Objectives: The course is organized around on two themes: (1) "Black Spatial Matters" involves our analysis of critical approaches to nature, space, place, and other geographic matters that meaningfully contribute to theorizations of blackness; and (2) "Black Space Matters," through which we will focus on the political economic means by which the production of Black space is foundational to imaginative Black placemaking, self-actualization, and ways to catalogue future and existing spaces. Each text that falls under the "Black Spatial Matters" category will be followed by a corresponding "Black Space Matters" text. The two texts should be thought directly in relation to one another. Throughout the course we will engage such themes as Black cities, Black economies, Black poetics, and Black value by drawing on intellectual histories and politics of Black feminist, queer, indigenous, post-colonial, and critical race studies.

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: Summers

Black Geographies: Read Less [-]

GEOG 206 Research Seminar in Comparative Urban Studies 3 Units

Terms offered: Spring 2022, Spring 2020

In this seminar students will discuss research design, method, writing, and engage with one another's research and dissertation projects. Two-thirds of each class meeting will be devoted to discussion of students' work in progress. Each student will present their ongoing projects 3-4 times throughout the semester and receive constructive feedback from the seminar participants. One third of each class meeting is used for professional development workshops on topics of analyzing fieldnotes, engaging literature, publishing journal articles, gender and racial dynamics in academia, job talks and Job market, converting dissertation into a book, using maps, tables, and numbers in presentation, and doing a social science with something to say.

Research Seminar in Comparative Urban Studies: Read More [+]

Rules & Requirements

Credit Restrictions: Students will receive no credit for GEOG 206 after completing GEOG 206. A deficient grade in GEOG 206 may be removed by taking GEOG 206.

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: Hsing

Research Seminar in Comparative Urban Studies: 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: Fall 2020, Spring 2019, Spring 2017

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: Prior to 2007

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 2021, Spring 2020, Spring 2018, Spring 2017

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 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: Spring 2020, Fall 2014, Spring 2014, Fall 2013

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 2020, Fall 2017, Spring 2015

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: Fall 2021, Spring 2016, Spring 2015

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 2021, Fall 2019, Spring 2019

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: Fall 2022, Spring 2015, Spring 2013

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 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 [a]

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 2020, Fall 2019, Fall 2018

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 [a]

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 [a]

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: Fall 2021, Fall 2020, Spring 2019

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 2022, Spring 2022, Fall 2021

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 2022, Spring 2022, Fall 2021

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 2022 10 Week Session, Summer 2021 10 Week Session, Summer 2020 10 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 2019, Spring 2019, Fall 2018

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 2022, Spring 2022, Fall 2021

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 2022, Spring 2022, Fall 2021

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 2022 10 Week Session, Summer 2021, Summer 2021 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: Spring 2020, Spring 2019, Spring 2018

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 2021, Spring 2020, Spring 2019, 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 2022, Fall 2021, Fall 2020

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 2022, Spring 2022, Fall 2021

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](#) [-]