



Berkeley Geography

Undergraduate Student Handbook, 2019-2020

DEPARTMENT OF GEOGRAPHY

All human activity takes place on a geographic stage of great diversity and constant transformation. For more than a century, the Geography Department at Berkeley has been a leading center of scholarship about earth's landscapes and human relationships to the environment. Our inquiries encompass a wide range of topics, from the economies and cultures of cities and built landscapes, to tropical climates and the flow of polar ice sheets. We combine rigorous empirical work with deeply conceptual theoretical analyses, always recognizing the importance of both spatial processes and accumulated histories. We use geographic analyses to illuminate the abiding problems of the modern world.

The Geography Department provides a broad-ranging perspective on humans as inhabitants and transformers of the face of the earth. The search for this kind of understanding involves thorough study of (a) the interlocking systems of the natural environment (climate, landforms, oceans, biota) and the evaluation of natural resources; (b) those diverse historical, cultural, social, economic, and political structures and processes which affect the location and spatial organization of population groups and their activities; and (c) significant geographical units, whether described as cities, regions, nations, states or landscapes, where integrated interpretation can be attempted, and a variety of problems thereby better understood.

THE GEOGRAPHY MAJOR

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

Completing a major in Geography requires satisfactory completion of three lower division courses and eight upper division courses. Transfer students who have taken introductory courses elsewhere should consult with the Undergraduate Major Advisor in order to avoid repeating lower division coursework.

DECLARING THE MAJOR

Students may declare the Geography major after completing at least 30 units, with a 2.0 or better cumulative Berkeley GPA, and after completion of at least two of the three lower division requirements. Junior transfer students should declare their major during the beginning of their second semester at Berkeley. A late-declaring major (determined as a senior) who has not completed one of the lower division requirements will be allowed to complete an equivalent upper division course in its place.

To declare your major in Geography, or to ask any questions about declaring the major, please schedule a meeting with the Undergraduate Major Advisor.

Undergraduate Major Advisor Contact Information:

Sarah Varner

509A McCone Hall

E-mail: svarner@berkeley.edu

Phone: 510-664-7698

Upon declaring the major, students will need to choose one of the two specialty groups:

Earth System Science or **Economy, Culture and Society**.

Earth System Science (a.k.a. Physical Geography)

This branch of geography focuses on the study of the interconnected components of our environment—the atmosphere, hydrosphere, lithosphere, cryosphere, and biosphere—and how they interact to produce an integrated whole. It utilizes the fundamental disciplines of mathematics, physics, chemistry, and biology and applies them in the context of human activities and landscapes to understand the Earth, at scales ranging from single watersheds to the entire globe.

The research of our Earth Systems Science faculty epitomizes this interdisciplinary and global approach, and with expertise in biogeochemistry, biogeography, climate dynamics and climate change, geomorphology, glaciology, hydrology, and terrestrial ecology. Our research spans all corners of the world—from the swamps of the Everglades to the tundra of Alaska, from the ocean-atmosphere systems of the tropical Pacific to the vast ice sheets of Antarctica.

Economy, Culture and Society (a.k.a. Human Geography)

Human geography is a social science distinguished by its attention to the relation of humanity to the earth, in two regards. The first concerns the interaction of people with nature, including the extraction of natural resources, the environmental impact of people and their activities, and the effects of natural forces on society. The second concerns the spatial organization of societies at all scales from the local to the global (and from minutes to millennia) and the production of place, territory and landscape by human imagination and activity.

Our Economy, Culture and Society faculty and graduate students work all around the world and explore an enormous range of topics: forest and range utilization in the North America, urban development in China, agrarian change and resource extraction in Africa, conflict and human rights in Latin America, and much more. We examine borders and migration, conservation and development, globalization and governance, while attending closely to the roles of race, gender, and class and of science, technology and economy in shaping the world around us.

MAJOR ADVISING

In addition to helping you declare your major, the Undergraduate Major Advisor can help you plan the path you will take through the major by helping you select courses that will suit your interests and academic strengths.

The UMA can also serve as a resource in many other ways, aside from purely academic matters. The UMA will regularly send out emails to geography students about research opportunities, study abroad programs, geography-related internships and job opportunities, as well as events on campus that may be of interest to geography students. Students are encouraged to utilize the UMA as a resource in whatever ways they need support and assistance within the department.

Students are welcome to schedule an appointment with the UMA through the following link:
<https://calendly.com/svarner-geography>.

Please note that students who do not show up for their appointment within 15 minutes of its start time (and without previously notifying the UMA that they will be late) will have their appointment cancelled and will be asked to reschedule.

In addition to the UMA, the department has two designated undergraduate faculty advisors who can also serve as a valuable resource to students pursuing the geography major. Students are welcome to ask the faculty advisors questions about the content of geography courses, research opportunities, graduate school and career options in the field of geography.

The faculty advisors welcome students to meet with them during their office hours or by special appointment.

Professor Jovan Lewis

Assistant Professor and Undergraduate Faculty Advisor for Economy, Culture and Society
597 McCone Hall
Email for an appointment: jovan@berkeley.edu

Professor Jeffrey Q. Chambers

Professor and Undergraduate Faculty Advisor for Earth Systems Science
519 McCone Hall
Email for an appointment: jqchambers@berkeley.edu

MAJOR REQUIREMENTS

The major requires a student to take **three lower division courses**, one in each of these areas:

- Basic Physical Geography
- World Geography
- Regional Geography

In order to declare the major, a student must have taken and successfully passed at least **TWO** lower division courses, one from each area.

Upon declaring the major and completing the three lower division requirements, students will need to complete **eight upper division courses** in order to satisfy the requirements of the major. The eight upper division courses span the two different specialty groups, Earth System Science or Economy, Culture and Society, as well as a third section for methodology courses.

Both of the specialty groups have **ONE** required core course:

- All students choosing the Earth System Science option must take **Geography 140A**.
- All students choosing the Economy, Culture and Society option must take **Geography 110 -OR- Geography 130**.

Furthermore, the geography department utilizes two plans by which students can complete their eight upper division requirements: the **5-2-1 plan** or the **4-2-2 plan**.

In both plans, the first number represents the number of courses you must take in your chosen specialty group, while the second number represents the number of courses you must take in the other specialty group. The third number refers to the number of methodology courses you must take.

Here's an example:

Taylor wants to declare her major in geography and has chosen the Earth Systems Science specialty group as her focus. Given her interest in chemistry, math and cartography, she has chosen the 4-2-2 plan so that she can take two courses in methodology to satisfy her major. Taylor creates a 4-year program plan that includes the following courses:

- Four Earth System Science courses (including the required core course, GEOG 140A)
- Two Economy, Culture and Society courses
- Two methodology courses

The 5-2-1 and 4-2-2 plans are not set in stone and can be changed easily during the progression of your major. Please consult with the UMA if you have questions about changing your plan.

TRANSFER STUDENTS

If you applied to UC Berkeley as a transfer student, you may have indicated your intended major as geography; however, all transfer students are admitted as undeclared majors, which means you will still need to officially declare your major in geography. Geography is not an impacted or capped major, so as long as you have completed two out of the three lower division geography requirements, you will be able to declare your major in geography starting the second week of classes. You will need to schedule a meeting with the UMA in order to declare your major; it's recommended that you bring copies of your previous transcripts with you (unofficial copies are fine) to better help the UMA determine your ability to declare the major.

The Geography Department does not rule on the acceptability of course work and units earned at other universities towards university requirements; the College of Letters and Science determine this. However, the UMA can help determine whether geography courses taken at other institutions fulfill any of the major requirements. Most courses taken at other campuses in the UC system and other major universities may be applied toward the major program. Additionally, many community college courses in cultural, physical and economic geography are accepted as equivalent to the lower division course requirements in the Berkeley Geography Department. Courses in general geography (e.g., World Regional Geography) are sometimes accepted as fulfilling one of the lower division course requirements.

COURSE OFFERINGS

Lower Division Courses

All students must take three lower division courses, one from each group.

Basic Physical Geography	World Geography	Regional Geography
<p>GEOG N1. Global Environmental Change</p> <p>GEOG 40. Introduction to Earth System Science</p> <p>ESPM 15. Introduction to Environmental Science</p>	<p>GEOG N4. World Peoples and Cultural Environments</p> <p>GEOG 10AC. Worldlings – Regions, Peoples and States</p> <p>GEOG 20. Globalization</p>	<p>GEOG C32. Introduction to Global Studies</p> <p>GEOG 50AC. California</p> <p>GEOG C55. Introduction to Central Asia</p> <p>GEOG 70AC. The Urban Experience</p>

Upper Division Courses

All students must take eight upper division courses across all three groups.

Earth System Science	Economy, Culture and Society	Methodology
<p>GEOG C135. Water Resources and the Environment</p> <p>GEOG C136. Terrestrial Hydrology</p> <p>GEOG 137. Top Ten Global Environmental Problems</p> <p>GEOG C139. Atmospheric Physics & Dynamics</p> <p>GEOG 140A. Physical Landscapes: Process & Form*</p> <p>GEOG 140B. Physiography & Geomorphologic Extremes</p> <p>GEOG 142. Climate Dynamics</p> <p>GEOG 143. Global Change and Biogeochemistry</p> <p>GEOG 144. Principles of Meteorology</p> <p>GEOG C146. Communicating Ocean Science</p> <p>GEOG 147. Communicating Climate Science</p> <p>GEOG C148. Biogeography</p> <p>GEOG 149A. Climates of the World</p> <p>GEOG 149B. Climate Impacts and Risk Analysis</p> <p>GEOG 171. Special Topics in Physical Geography</p> <p>GEOG 175. Undergraduate Seminar</p>	<p>GEOG 110. Economic Geography of the Industrial World*</p> <p>GEOG C112. Global Development: Theory, History, Geography</p> <p>GEOG 130. Food and Environment*</p> <p>GEOG 138. Global Environmental Politics</p> <p>GEOG C155. Race, Space, and Inequality</p> <p>GEOG 157. Politics of the Anthropocene</p> <p>GEOG 159AC. The Southern Border</p> <p>GEOG 160: American Landscapes: History, Culture and the Built Environment</p> <p>GEOG 164. Geography of Economic Development in China</p> <p>GEOG 167. Border Geographies, Migration and Decolonial Movements of Latin America</p> <p>GEOG 170. Selected Topics</p> <p>GEOG 175. Undergraduate Seminar</p>	<p>GEOG N80. Digital Worlds</p> <p>GEOG 180. Field Method for Physical Geography</p> <p>GEOG 181. Urban Field Study</p> <p>GEOG 182. Field Study of Buildings and Cities</p> <p>GEOG 183. Cartographic Representation</p> <p>GEOG 185. Earth System Remote Sensing</p> <p>GEOG 186. Web Cartography</p> <p>GEOG 187. Geographic Information Analysis</p> <p>GEOG C188. Geographic Information Systems</p>

COURSE SUBSTITUTIONS

Most geography courses are offered only once a year, and while some courses will reliably be offered each year, other courses may come and go based on faculty availability, course popularity and departmental agenda.

As a result, the geography department is flexible in allowing substitutions from other departments to satisfy major requirements. While some courses are already deemed suitable substitutions, other courses may need to be evaluated by the UMA on a case-by-case basis. Students may substitute a maximum of **TWO** lower division courses and/or **TWO** upper division courses. Students who spend a semester studying abroad are allowed to substitute up to three upper division courses.

ACADEMIC PERFORMANCE REQUIREMENTS

1. All courses taken to fulfill the major requirements below must be taken for graded credit, other than courses listed which are offered on a Pass/No Pass basis only.
2. GEOG H195A/H195B, GEOG 197, GEOG 198, and GEOG 199 cannot be used to satisfy a major or minor program requirement.
3. All students must complete at least one semester of residence in the major before graduation.
4. Students are expected to enroll in at least 13 units per semester, with 15 units being considered a normal course load. The maximum number of units allowed per semester is 20.5; for unique situations, exceptions can be granted to exceed the maximum. Please meet with the UMA to discuss your request to exceed the semester unit cap.
5. A minimum grade point average of a 2.0 must be maintained in both upper and lower division courses used to fulfill the major requirements.
6. Students must learn at least a C- in all courses required for the major, including lower and upper division courses.

Note about maintaining minimum grades: According to an Academic Senate rule, if a student fails to get at least a C- (2.0) in any unit undertaken in the major, the department can dismiss him/her from the major, and send the student back to the College to select another major at which he/she will be more successful. The department would be reluctant to do that, but the faculty advisors may review a student's file if at any time the student's earned grades cause the student to dip below the 2.0 threshold. Thus, a student cannot accumulate a number of D's and F's in geography, while managing to pass a number of other courses with a C or better, and expect to be allowed to complete the major.

If you find yourself needing assistance in order to be successful in the major, please don't hesitate to reach out to the UMA, the faculty advisors, or your course instructors for guidance.

ADDITIONAL ACADEMIC OPPORTUNITIES

DOUBLE MAJOR IN GEOGRAPHY

Geography may be pursued as part of a student's double major. Regulations regarding the declaration of a double major and application may be found on the website for the College of Letters & Science or for the college in which the student is currently enrolled. Students interested in completing double majors should make it a point to see the Undergraduate Major Advisors in both departments as early as possible in order to plan their programs.

MINOR PROGRAM IN GEOGRAPHY

Students are welcome to declare a minor in geography to complement their academic study in another department. The minor will be noted officially on your transcript in the memoranda section, but will not be included on your diploma.

1. The geography minor is comprised of any five upper division courses, as long as one course is selected from each specialty group (physical geography and human geography).
2. All five upper division courses counting toward the minor must be taken for a letter grade.
3. At least three of the five courses must be completed at UC Berkeley.
4. A minimum grade point average (GPA) of 2.0 is required for courses used to fulfill the minor requirements.
5. No more than one upper division course may be used to simultaneously fulfill requirements for a student's major and minor.
6. All minor requirements must be completed prior to the last day of finals during the semester in which you plan to graduate.

Students interested in the geography minor should schedule a meeting with the UMA in order to declare the minor.

- All undergraduate minors must be declared no later than one semester prior to a student's Expected Graduation Term (EGT). The deadline is the last day of RRR Week during that term.

HONORS PROGRAM (H195A/H195B)

Students with an overall grade point average of 3.5 or higher on all work completed at the university, and an average of 3.5 in courses taken in the geography department, may apply for the Honors Program.

The application should be submitted at the beginning of the senior year. A senior in the Honors Program must complete Geography H195A and/or H195B consecutively, in which a thesis is required (usually over two semesters, but one semester is also acceptable). Any faculty member within the department may administer an honors course. It is suggested that you approach faculty members with whom you've taken classes about being your mentor.

After deciding on the number of units (1-4 units) you wish to undertake, see the UMA about enrolling in H195A or H195B. Upon successful completion of the program, you will receive departmental honors

based on your major GPA; a 3.3-3.6 for “Honors,” a 3.61-3.81 for “High Honors” and a 3.81-4.0 for “Highest Honors.” This designation will be noted on your transcript and on your diploma.

Application forms for the honors program can be picked up in the UMA’s office.

FIELD STUDY IN GEOGRAPHY (GEOG 197)

GEOG 197 is a variable-unit course designed to provide students with a supervised experience in the application of geography in off-campus organizations, such as internships or extracurricular experiences. Regular individual meetings with a faculty sponsor and written reports are required throughout the semester; students and faculty may work together to determine the format of the written reports and the frequency with which they must be submitted. Additionally, you and your faculty sponsor must come to an agreement regarding the number of units (1-4) that will be associated with the course.

Additional regulations surrounding enrollment in GEOG 197 include:

- Students may be eligible to enroll in GEOG 197 if they have reached junior standing (60 semester units or more) and have a 2.0 cumulative GPA or better.
- Credit for GEOG 197 (or other independent study units) in a single term may not total more than four semester units.
- No more than 16 semester units of courses numbered 197, 198 or 199 may be used to meet the 120 minimum units for a bachelor’s degree.
- Only a grade of P/NP may be assigned for GEOG 197.

Application forms for GEOG 197 can be picked up in the UMA’s office.

DIRECTED GROUP STUDY IN GEOGRAPHY (GEOG 198)

Students may choose to participate in a directed group study with other geography majors along with the guidance of a faculty sponsor. Students should work with their faculty sponsor to decide upon the number of units (1-4) they wish to pursue for the directed group study.

Additional regulations surrounding enrollment in GEOG 198 include:

- Students may be eligible to enroll in GEOG 198 if they have reached junior standing (60 semester units or more) and have a 2.0 cumulative GPA or better.
- Credit for GEOG 198 (or other independent study units) in a single term may not total more than four semester units.
- No more than 16 semester units of courses numbered 197, 198 or 199 may be used to meet the 120 minimum units for a bachelor’s degree.
- Only a grade of P/NP may be assigned for GEOG 198.

Application forms for GEOG 198 can be picked up in the UMA’s office.

SUPERVISED INDEPENDENT STUDY IN GEOGRAPHY (GEOG 199)

GEOG 199 is a variable-unit course designed to provide students with an opportunity dive deeper into the academic experience within the geography department; an independent study is frequently used for students who are hoping to conduct undergraduate research, but can take other forms as well.

A student conducting an independent study will work with their faculty sponsor to determine the expectations for student output during the independent study (i.e. regular meetings with faculty sponsor, written reports, etc.). Additionally, they must come to an agreement regarding the number of units (1-4) that will be associated with the course.

Additional regulations surrounding enrollment in GEOG 199 include:

- Students may be eligible to enroll in GEOG 199 if they have reached senior standing (90 semester units or more) and have a 3.0 cumulative GPA or better. Exceptions can be made for students who wish to partake in an independent study at an earlier stage.
- Credit for GEOG 199 (or other independent study units) in a single term may not total more than four semester units.
- No more than 16 semester units of courses numbered 197, 198 or 199 may be used to meet the 120 minimum units for a bachelor's degree.
- Only a grade of P/NP may be assigned for GEOG 199.

Application forms for GEOG 199 can be picked up in the UMA's office.

STUDENT LEARNING GOALS AND OUTCOMES

Through your time as a student in the geography department, you will collect a varied and robust set of skills that will serve as a valuable foundation for any number of future careers. These goals and learning outcomes are set forth by the faculty as the ideal range of skills and knowledge that a student will gain by the time they leave the department:

1. Spatial, holistic thinking at the intersections of society, space, and nature
 - a. Phenomena in place: Explain the spatial dimensions (location, place, landscape, region, and territory) of human life and the global environment—how human and earth science phenomena “take their place” on the surface of the earth.
 - b. Earth systems: Comprehend how the Earth functions as a complex system of interacting components and how this system applies to and is affected by humanity.
 - c. Scales of space and time: Understand processes operating at different spatial and temporal scales in the earth system and in human histories.
 - d. Nature and society: Recognize natural resource flows through human systems and identify social constructions of nature and vulnerabilities to natural disasters.
 - e. Interdisciplinarity: Combine insights from the natural sciences, social sciences, and humanities to better understand the problems of the increasingly interconnected and ecologically fragile world.
2. Addressing diversity in both human and physical geography
 - a. Peoples and places: Discuss, interpret, and explain differences of wealth, power, health, and well-being between and within societies, and the processes that create these patterns.
 - b. Physical processes: Discuss, interpret, and explain the diversity of—and the processes responsible for—the landforms, climates, and ecosystems that constitute our planet’s physical landscapes.
 - c. Reading landscapes: Deduce questions and hypotheses through clues in material landscapes.
3. Analysis and application for students who choose the Economy, Culture, and Society track
 - a. Role of Space: Understand the function of boundaries, territories, places, networks, and other spatial forms in the workings of human societies.
 - b. Power and landscapes: Understand the projection, protection, and contestation of power through the production of ideas, cultures, empires, and spatial forms.
 - c. Roles of cities: Grasp the roles and forms of cities as records and motors of modern life, and the interactions of urban areas with hinterlands and global networks.
 - d. Food systems: Compare and contrast agrarian and industrial food supply systems around the world.
 - e. Society-environment interactions: Understand the mutual influences and ramifications of biophysical and social processes in the dynamics of societies at scales from the local to the global.
4. Analysis and application for students who choose the Earth Systems Science track
 - a. Earth system science: Analyze interconnected environmental systems with process-based geophysical, geochemical, and biological sciences in the context of current social environmental problems.
 - b. Modeling: Construct models of the earth as a system of interconnected components, highlighting forcings and feedbacks.

- c. Experiments: Formulate and apply scientific hypotheses and devise tests for them.
 - d. Science and society: Analyze and evaluate the role of science in shaping social forces, and being shaped by them.
5. Application of basic skills in research, knowledge of literature, analysis, and communication
- a. Write clearly: Demonstrate ability to focus and elaborate on chosen topics.
 - b. Read critically: Critically analyze and assess arguments in professional journals, public media, and advocacy literature.
 - c. Empirical plus theoretical: Produce work with robust empirical research (that locates, interprets, and puts together relevant and reliable sources of information) as well as intellectual and theoretical rigor.
 - d. Use of mapping: Understand the production, interpretation, and use of mapping in all its forms and scales.
 - e. Applying quantitative skills: Apply basic quantitative skills such as statistics, algebra, and interpreting graphs.
 - f. Analytical ability: Demonstrate analytical ability: including the ability to identify questions, differentiate descriptions from explanations, make connections between empirical observations and arguments, and differentiate between competing explanations of a given phenomenon.
6. Lifetime skills
- a. Continuing concern: Show continuing concern, curiosity, and zeal for geography and for applying geographical understanding.
 - b. Representing geography: Represent the usefulness of geography and geographical points of view to—depending on the circumstances—prospective employers, educators, policy makers, resource managers, developers, engineers, the public, and acquaintances

CODE OF ETHICS AND CLIMATE STANDARDS

The Department of Geography at the University of California, Berkeley offers one of the finest undergraduate degrees in the world. The department prides itself in having a harmonious and respectful space where every person in our community receives respect and civility from one another.

CODE OF ETHICS

Each of you must uphold high ethical standards to protect the unique opportunities afforded to you through your affiliation with this department. Any student who does not uphold these standards should not expect to declare or continue to major in the geography department:

Neither this department, nor its students, will condone cheating, lying, or any other misrepresentations. Moreover, anyone who willingly conceals these activities will be considered accomplices and equally culpable. All undergraduate students are expected to comply with the code of ethics as stated above. In doing so, we commit ourselves to upholding the standards of honesty, integrity and personal responsibility.

Violations of the code of ethics will be referred to the University of California, Berkeley's Center for Student Conduct and Community Standards and can be grounds for dismissal from the major.

CLIMATE STANDARDS

As part of our educational community, the undergraduate student is required to adhere to certain responsibilities. We expect from our students the highest ethical behavior and their contribution to an environment that is free from discrimination and harassment on the basis of categories including race, color, national origin, gender, age and sexual orientation/identity. This department depends on the personal integrity of each of us. Your grades and your degree will mean little without a firm foundation upon which to base these credentials.

Violations of the climate standards will be referred to the University of California, Berkeley's Center for Student Conduct and Community Standards and can be grounds for dismissal from the major.