Sustainable Environmental Design

Bachelor of Arts (BA)

The Sustainable Environmental Design major recognizes that the emergent, multidisciplinary field of sustainability science is growing rapidly. As the world population urbanizes, the planning and design of resilient, resource-efficient, healthy and socially just cities and metropolitan regions is profoundly important. The College of Environmental Design, with its long-standing expertise in sustainable urbanism and design, is an ideal setting for an undergraduate major in sustainable environmental design, with a focus on the built environment.

The major offers students a critical understanding of the sustainability challenges facing urban regions in California and around the globe and equips them with the technical, analytic, and design tools key to devising creative solutions. Graduates have many career paths and fields of graduate study open to them. Students who complete this major will:

1. Understand the application of physical, biological, and social science in the design of sustainable cities and metropolitan regions.
2. Understand sustainable urban technologies and design strategies.
3. Comprehend issues of equity and social justice as they relate to sustainable cities and regions.
4. Evaluate and monitor the present state and future potential of built environments in terms of sustainability.
5. Comprehend the implications of policy and institutions and their potential to shape future sustainable cities and regions.

Program Overview

Features of the major include the following:

- The gateway course, LD ARCH 12, Environmental Science for Sustainable Development, introduces students to the scientific basis of sustainability as explored through the study of energy, water, food, natural resources and the built environment, with a focus on the application of scientific insights to sustainable development strategies. The course emphasizes hands-on learning through field-based exercises such as measurement of atmospheric particulate matter, micro-climates, channel form, aquatic insects and water quality, and direct observations of green infrastructure, green building methods, and urban agriculture.
- A Critical Approaches course, ENV DES 102, Critical Debates in Sustainable Urbanism. The course challenges students to think critically about the idea of sustainability, develop critiques of current sustainable urbanism/design practice, and envision the institutional and behavioral changes required for a more sustainable future.
- A Methods/Technology course, LD ARCH C188 /GEOG C188, Geographic Information Systems (GIS). GIS has become a basic tool for a wide range of analytic tasks across all environmental design fields. The course addresses both GIS theory and applications, offering a dynamic analytical framework for gathering, integrating, interpreting, and manipulating temporal and spatial data.
- A set of upper division courses on energy and environment, deep green design, the nature of cities, planning for sustainability, ecological analysis, and sustainable cities and landscapes.
- A series of highly recommended area concentrations allowing students to specialize in a variety of aspects of sustainability such as economics, business, and policy, society, culture, and ethics, resources and environmental management, or design and technology.
- A capstone workshop course, ENV DES 106, Sustainable Environmental Design Workshop. Linking sustainability science and technology with urban form and social dynamics, the workshop requires independent and collaborative research with an external client organization to offer innovative strategies for sustainable environmental design.

Admission to the Major

Students must declare one of the CED majors at the time of application to the college; however, current UC Berkeley students may apply to change into CED. Transfer applicants must complete two years worth of lower division coursework to be considered for admission to CED. For information regarding admission to the major for freshmen, transfer students, and current students who wish to change majors or colleges, please see the College of Environmental Design (CED) page (http://guide.berkeley.edu/undergraduate/degree-programs/sustainable-design/#choosingamajortext) in this Guide or the CED website (http://ced.berkeley.edu/admissions/undergraduate).

Sustainable Design Minor Program

The Department of Architecture and the Department of Landscape Architecture and Environmental Planning jointly offer a Sustainable Design Minor program (http://guide.berkeley.edu/undergraduate/degree-programs/sustainable-design). This minor program is open to undergraduate students at UC Berkeley except those in the Sustainable Environmental Design Major.

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

General Guidelines

1. Courses taken to fulfill lower division major requirements may also be used to fulfill Seven-Course Breadth.
2. All lower division courses taken in fulfillment of major requirements must be completed with a grade of C- or better. A minimum grade point average (GPA) of 2.0 must be maintained in upper and lower division courses used to fulfill the major requirements.
3. A minimum overall GPA of 2.0 for all courses taken at UC Berkeley is required for graduation.
4. Courses used to fulfill an upper division major requirement may not simultaneously fulfill a breadth requirement.
5. Up to two upper division courses taken at another institution, including an approved study abroad program, may be applied to the major requirements below (if transferable and approved in advance).

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

Summary of Major Requirements

Lower Division Requirements: Five Courses

Upper Division Sustainable Environmental Design Core: Eight Courses

Recommended Sustainable Environmental Design Area Concentrations
Lower Division Major Requirements: Freshman and Sophomore Year

LD ARCH 12  Environmental Science for Sustainable Development  4
MATH 16A or MATH 1A  Analytic Geometry and Calculus  3-4
or Calculus
STAT 2 or STAT C8  Introduction to Statistics (or higher)  4
PHYSICS 7A or PHYSICS 8A  Physics for Scientists and Engineers  4
Select one of the following:  4
ECON 1  Introduction to Economics [4]
ECON 2  Introduction to Economics–Lecture Format [4]
ENVECON 1  Introduction to Environmental Economics and
C1/ECON 3  Policy [4]

Upper Division Sustainable Environmental Design Core (Courses Inside CED)

ARCH 140  Energy and Environment  4
ARCH 242 or ARCH 142  Sustainability Colloquium  2
CY PLAN 119  Planning for Sustainability  4
ENV DES 100  The City: Theories and Methods in Urban Studies  4
ENV DES 102  Critical Debates in Sustainable Urbanism  3
ENV DES 106  Sustainable Environmental Design Workshop  4
LD ARCH 110  Ecological Analysis (3 units)  4
or LD ARCH 113  Sustainable Landscapes and Cities
LD ARCH/GEOG 180  Geographic Information Systems  4

Recommended Sustainable Environmental Design Area Concentrations

The intent of recommended area courses is to provide students with opportunities to deepen their knowledge about specific issues in sustainability. Each of the area courses focuses on an essential aspect of sustainability with the premise that urban sustainability is a multi-dimensional problem and sustainable environments emerge from the intersection of technology, design, economics, policy, and societal change.

Economics, Business and Policy

CY PLAN 113A  Economic Analysis for Planning  3
CY PLAN 113B  Community and Economic Development  4
CY PLAN 115  Urbanization in Developing Countries  4
ENVECON 100  Microeconomic Theory with Application to Natural Resources
ENVECON C151  Development Economics  4
ENVECON/IAS C175  The Economics of Climate Change  4
ESPM 60  Environmental Policy, Administration, and Law  4
ESPM 166  Course Not Available  4
ESPM 168  Political Ecology  4
ESPM 169  International Environmental Politics  4
ESPM/EDUC C193A  Environmental Education  3
PUB POL 182  Environment and Technology from the Policy and Business Perspective  4
UGBA 107  The Social, Political, and Ethical Environment of Business  3
UGBA 180  Introduction to Real Estate and Urban Land Economics  3

Society, Culture and Ethics

ANTHRO 137  Energy, Culture and Social Organization  4
ARCH 110AC  The Social and Cultural Processes in Architecture & Urban Design  3
ARCH 133  Architectures of Globalization: Contested Spaces of Global Culture  3
CY PLAN 118AC  The Urban Community  4
ESPM 151  Society, Environment, and Culture  4
ESPM 161  Environmental Philosophy and Ethics  4
ESPM 163AC  Environmental Justice: Race, Class, Equity, and the Environment  4
ESPM C167/ PB HLTH C160  Environmental Health and Development  4
ESPM 168  Political Ecology  4
LD ARCH 140  Social and Psychological Factors in Open Space Design  3

Environmental Planning and Management

ESPM 50AC  Introduction to Culture and Natural Resource Management  4
ESPM 102C  Resource Management  4
ESPM 102D  Climate and Energy Policy  4
ESPM 117  Urban Garden Ecosystems  4
INTEGBI 152  Environmental Toxicology  4
LD ARCH 122  Hydrology for Planners  4
LD ARCH 289  Applied Remote Sensing (instructor consent required)  3

Design and Technology

ARCH 11A  Introduction to Visual Representation and Drawing (Formerly ENV DES 11A)  4
ARCH 11B  Introduction to Design (Formerly ENV DES 11B)  5
ARCH 104  Urban Design: City-Building and Place-Making  3
ARCH 122  Principles of Computer Aided Architectural Design  4
ARCH 130  Introduction to Architectural Design Theory and Criticism  4
ARCH 149/249  Special Topics in Energy and Environment  4
ARCH 160  Introduction to Construction  4
CY PLAN 114  Introduction to Urban and Regional Transportation  3
CY PLAN 140  Urban Design: City-Building and Place-Making  3
ENV DES 104  Design Frameworks  3
GEOG 125  The American City  4
LD ARCH 1  Drawing a Green Future: Fundamentals of Visual Representation and Creativity  4

For College Requirements, please refer to the College of Environmental Design (http://guide.berkeley.edu/undergraduate/colleges-schools/environmental-design/#collegerequirementstext).
Sustainable Environmental Design

Each student’s plan will vary depending on interests. Students should see their adviser if they are interested in applying for graduate school, studying abroad, attending summer school, or pursuing a minor or second major.

For more detailed information regarding the courses listed below (e.g., elective information or GPA requirements), please see the Major Requirements tab.

### Learning Goals of the Major

1. Understand the application of physical, biological, and social science in the design of sustainable cities and metropolitan regions
2. Understand sustainable urban technologies and design strategies
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The CED Office of Undergraduate Advising provides a wide array of programmatic and individual advising services to prospective and current students as well as to students in other colleges who are pursuing CED minors or taking CED courses. The professional advising team assists students with a range of issues including course selection, academic decision-making, achieving personal and academic goals, and maximizing the Berkeley experience.

### Advising Staff

**Architecture Major Advisor:** Isela Pena-Rager  
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**Landscape Architecture Major Advisor:** Omar Ramirez  
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510-642-0408

**Associate Dean for Undergraduate Studies:** C. Greig Crysler  
250 Wurster Hall  
cgreigc@gmail.com (cgreigc@berkeley.edu)

### Advising Hours

Fall/spring: Monday through Friday, 10 to noon (office opens at 9 a.m.) & 1 to 4 p.m.  
Summer: Monday through Friday, 10 to noon & 1 to 3 p.m.

### Address

Office of Undergraduate Advising
College of Environmental Design
250 Wurster Hall #1800
University of California
Berkeley, CA 94720-1800
510-642-4943

CED Career Services
The CED Career Services Center (CSC) offers personalized career counseling, a yearly CED Career Fair, and a wide variety of professional development workshops on topics such as licensure, internships, and applying for graduate school. To schedule an appointment with the Career Counselor or for more information on CED CSC, please click here.

Office of Undergraduate Advising (http://ced.berkeley.edu/ced/students/undergraduate-advising)
- Newly-Admitted Students (http://ced.berkeley.edu/ced/students/undergraduate-advising/newly-admitted-students)
- Current Students (http://ced.berkeley.edu/ced/students/undergraduate-advising/continuing-students)
- Graduation and Commencement (http://ced.berkeley.edu/ced/students/undergraduate-advising/graduation-commencement)
- Services and Contract (http://ced.berkeley.edu/ced/students/undergraduate-advising/services-contract)
- Articulation (http://ced.berkeley.edu/ced/students/undergraduate-advising/articulation)
- Policies and Resources (http://ced.berkeley.edu/ced/students/undergraduate-advising/policies-resources)
- Forms and Documents (http://ced.berkeley.edu/ced/students/undergraduate-advising/forms-documents)

Mission
The College of Environmental Design (CED) Office of Undergraduate Advising helps students graduate in a timely way with a meaningful educational experience at Berkeley. In alignment with the College’s Vision and Principles, the Office of Undergraduate Advising collaborates with CED faculty, deans, and student service units across campus toward the common objective of supporting students as they achieve their educational and career goals. Goals include the following:
- Attracting a highly-motivated, diverse pool of applicants
- Connecting students with resources that match their goals and aspirations
- Supporting the development and transformation of undergraduates as they become educated, active, and socially just citizens of the world
- Preparing graduates who are uniquely qualified and highly sought after in their field of choice

Advising Values
Student Success. Above all, the College dedicates itself to maximizing student potential and to helping students succeed in their university experiences. Advisors encourage students to explore their minds and their hearts, challenge them to do their best work, and help them realize their talents and passions and achieve their goals.

Equity & Inclusion. CED is committed to creating an inclusive environment in which any individual or group can be and feel welcomed, respected, supported, and valued. Advisors aspire to provide fair treatment, access, opportunity, and advancement for all students, and to identify and eliminate barriers that prevent the full participation of all.

Health & Well-Being. CED collaborates with campus partners to keep the community healthy by helping students balance the physical, intellectual, emotional, social, occupational, spiritual, and environmental aspects of life.

Advising Excellence. In all that it does, the College strives to deliver personalized advising services of the highest quality by continuously educating itself on developments in the field and to evaluate, improve, and streamline services to support students in obtaining the best education and experience possible.

Student Groups and Organizations
The college provides opportunities for students to be involved in student chapters of professional organizations such as the American Institute of Architects (AIAS), the American Society of Landscape Architects (ASLA) as well as other student groups like the Chicano@/Latino@ Architecture Student Association (CASA), Global Architecture Brigades, and more. For information regarding student groups, please see the Getting Involved page of the CED website.

Study Abroad
The College of Environmental Design (CED) encourages all undergraduates in the college to study abroad. Whether students are interested in fulfilling general education requirements, taking courses related to their major/career, or simply living and studying in a country that is of interest to them, the department will work with students to make it happen. For information about study abroad programs, please see the Berkeley Study Abroad website.

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Prizes and Awards
CED offers a number of annual prizes, awards, scholarships, fellowships, and grants to its currently enrolled students. Some of these prizes and awards are college-wide and some are geared toward students in specific majors. For general information regarding CED prizes and awards, including application instructions and a deadline calendar, please click here.

CED Events and Exhibits Calendar
CED and Wurster Hall are home to a variety of events, lectures, and exhibitions that welcome professors, professionals, and friends to the college to discuss and celebrate the community and professions. Through events and media, the College of Environmental Design is constantly creating ways to keep the college connected and up-to-date. To view this calendar, please click here.
CED on Facebook (https://www.facebook.com/groups/59611725522)
CED on Twitter (https://twitter.com/CEDNews)
CED Lecture Series
The Departments of Architecture, City and Regional Planning, and Landscape Architecture and Environmental Planning each sponsor lecture series, which offers students the opportunity to hear internationally-acclaimed speakers. These speakers often also participate in classes and seminars as part of their visit to campus. For a schedule of speakers and events in these lecture series, please see the CED website (http://ced.berkeley.edu/events-media/lecture-series).

WursterLife
WursterLife (https://ced.berkeley.edu/ced/alumni-friends/wursterlife) is a closed-network platform that enables CED students and alumni from across the globe to connect with classmates, find alumni by practice area, geographic region, affinity group, or shared interest, share professional updates, news, photos, events, and jobs, enhance your career through your alumni connections, and find ways to stay engaged with the UC Berkeley College of Environmental Design.

Research Opportunities, Internships, Public Service, and Volunteer Opportunities
Check out the CED Office of Undergraduate Advising website (http://ced.berkeley.edu/ced/students/undergraduate-advising) for additional opportunities.