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, ENV DES 110 is taken by all incoming SED first years and transfer students. The course is an opportunity to meet your cohort and explores varying interpretations of sustainability through the fields of design, economics, law, and advocacy. Guest speakers will walk students through various career and life paths in the field of sustainability, and demonstrate how the field is being constructed in real time. The course will also introduce students to various concentrations, dual-degrees and certificate programs available to SED majors.

• 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, microclimates, 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, Climate Changes and City Planning: Adaptation and Resilience, 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/colleges-schools/environmental-design/choosingamajor/text) 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.

The Sustainable Environmental Design major requirements differ by students’ admit year to UC Berkeley. The requirements listed below are the most recent. In the Berkeley Academic Guide Archive (http://guide.berkeley.edu/archive/), refer to the year you were admitted to UC Berkeley for your major requirements.

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: Six Courses**

**Upper Division Sustainable Environmental Design Core: Nine Courses**

**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**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CY PLAN 113A</td>
<td>Economic Analysis for Planning</td>
<td>3</td>
</tr>
<tr>
<td>CY PLAN 113B</td>
<td>Community and Economic Development</td>
<td>4</td>
</tr>
<tr>
<td>CY PLAN 114</td>
<td>Introduction to Urban and Regional Transportation</td>
<td>3</td>
</tr>
<tr>
<td>CY PLAN 115</td>
<td>Urbanization in Developing Countries</td>
<td>4</td>
</tr>
<tr>
<td>CY PLAN 120</td>
<td>Community Planning and Public Policy for Disability</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON C125</td>
<td>Environmental Economics</td>
<td>4</td>
</tr>
<tr>
<td>ENVECON 190</td>
<td>Seminar in Energy and Resources Issues</td>
<td>3</td>
</tr>
<tr>
<td>ENVECON 100</td>
<td>Intermediate Microeconomics with Applications to Sustainability</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVECON 147</td>
<td>Regulation of Energy and the Environment</td>
<td>4</td>
</tr>
<tr>
<td>ENVECON 162</td>
<td>Economics of Water Resources</td>
<td>3</td>
</tr>
<tr>
<td>ENVECON C176</td>
<td>Climate Change Economics</td>
<td>4</td>
</tr>
<tr>
<td>ESPM 60</td>
<td>Environmental Policy, Administration, and Law</td>
<td>4</td>
</tr>
<tr>
<td>ESPM 168</td>
<td>Political Ecology</td>
<td>4</td>
</tr>
<tr>
<td>ESPM 169</td>
<td>International Environmental Politics</td>
<td>4</td>
</tr>
<tr>
<td>UGBA 107</td>
<td>The Social, Political, and Ethical Environment of Business</td>
<td>3</td>
</tr>
<tr>
<td>UGBA 180</td>
<td>Introduction to Real Estate and Urban Land Economics</td>
<td>3</td>
</tr>
</tbody>
</table>

**Society, Culture and Ethics**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTHRO 137</td>
<td>Energy, Culture and Social Organization</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 110AC</td>
<td>The Social and Cultural Processes in Architecture &amp; Urban Design</td>
<td>4</td>
</tr>
<tr>
<td>CY PLAN 117AC</td>
<td>Urban &amp; Community Health</td>
<td>3</td>
</tr>
<tr>
<td>CY PLAN 118AC</td>
<td>The Urban Community</td>
<td>4</td>
</tr>
<tr>
<td>ENE,RES C100</td>
<td>Energy and Society</td>
<td>4</td>
</tr>
<tr>
<td>ENE,RES 101</td>
<td>Ecology and Society</td>
<td>3</td>
</tr>
<tr>
<td>ESPM 151</td>
<td>Society, Environment, and Culture</td>
<td>4</td>
</tr>
<tr>
<td>ESPM 161</td>
<td>Environmental Philosophy and Ethics</td>
<td>4</td>
</tr>
<tr>
<td>ESPM 163AC</td>
<td>Environmental Justice: Race, Class, Equity, and the Environment</td>
<td>4</td>
</tr>
<tr>
<td>ESPM C167/</td>
<td>Environmental Health and Development</td>
<td>4</td>
</tr>
<tr>
<td>PB HLTH C160</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESPM 168</td>
<td>Political Ecology</td>
<td>4</td>
</tr>
<tr>
<td>LD ARCH 140</td>
<td>Social and Psychological Factors in Open Space Design</td>
<td>3</td>
</tr>
<tr>
<td>LD ARCH 170</td>
<td>History and Literature of Landscape Architecture</td>
<td>3</td>
</tr>
<tr>
<td>LD ARCH C171</td>
<td>The American Designed Landscape Since 1850</td>
<td>3</td>
</tr>
<tr>
<td>NUSCTX 104</td>
<td>Food, Culture, and the Environment</td>
<td>2</td>
</tr>
<tr>
<td>NUSCTX W104</td>
<td>Food, Culture, and the Environment AC</td>
<td>3</td>
</tr>
<tr>
<td>SOCIOL 121</td>
<td>Innovation and Entrepreneurship: Social and Cultural Context</td>
<td>4</td>
</tr>
<tr>
<td>SOCIOL 136</td>
<td>Urban Sociology</td>
<td>4</td>
</tr>
<tr>
<td>SOCIOL 137AC</td>
<td>Environmental Justice: Race, Class, Equity, and the Environment</td>
<td>4</td>
</tr>
</tbody>
</table>

**Environmental Planning and Management**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENE,RES 102</td>
<td>Quantitative Aspects of Global Environmental Problems</td>
<td>4</td>
</tr>
</tbody>
</table>
**Design and Technology**

Note: LD ARCH 140 course from the Society, Culture and Ethics AREA list above, can also be used for Design and Technology AREA list.

**ARCH 11A** Introduction to Visual Representation and Drawing (Formerly ENV DES 11A) 4
**ARCH 11B** Introduction to Design (Formerly ENV DES 11B) 5
**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
**ART 100** Collaborative Innovation 4
**CY PLAN 110** Introduction to City Planning 4
**CY PLAN 140** Urban Design: City-Building and Place-Making 3
**DES INV 190** Special Topics in Design Innovation 1-4
**IND ENG 186** Product Management 3
**LD ARCH 1** Drawing a Green Future: Fundamentals of Visual Representation and Creativity 4
**LD ARCH 111** Plants in Design 3

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

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

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.

**Sustainable Environmental Design**

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
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

Major Maps help undergraduate students discover academic, co-curricular, and discovery opportunities at UC Berkeley based on intended major or field of interest. Developed by the Division of Undergraduate Education in collaboration with academic departments, these experience maps will help you:

- **Explore** your major and gain a better understanding of your field of study
- **Connect** with people and programs that inspire and sustain your creativity, drive, curiosity and success
- **Discover** opportunities for independent inquiry, enterprise, and creative expression

Students must complete 120 units to graduate.
• **Engage** locally and globally to broaden your perspectives and change the world

• **Reflect** on your academic career and prepare for life after Berkeley

Use the major map below as a guide to planning your undergraduate journey and designing your own unique Berkeley experience.

View the Sustainable Environmental Design Major Map PDF. ([https://vcue.berkeley.edu/sites/default/files/sustainable_environmental_design.pdf](https://vcue.berkeley.edu/sites/default/files/sustainable_environmental_design.pdf))

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:** Mel Barbers  
250 Bauer Wurster Hall  
mbarbers@berkeley.edu

**Landscape Architecture Major Advisor:** Kristian Dawson  
250 Bauer Wurster Hall  
kristian.dawson@berkeley.edu

**Sustainable Environmental Design Major Advisor:** Heather Grothjan  
250 Bauer Wurster Hall  
heather.grothjan@berkeley.edu

**Urban Studies Major Advisor:** Kristian Dawson  
250 Bauer Wurster Hall  
kristian.dawson@berkeley.edu

**College Evaluator:** Heather Grothjan  
250 Bauer Wurster Hall  
heather.grothjan@berkeley.edu

**Undergraduate Advising Director:** Omar Ramirez  
250 Bauer Wurster Hall  
oramirez@berkeley.edu

**Associate Dean for Undergraduate Studies:** C. Greig Crysler  
250 Bauer 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 Bauer Wurster Hall #1800  
University of California  
Berkeley, CA 94720-1800  
cedadvising@berkeley.edu

**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 ([http://ced.berkeley.edu/ced/students/career/](http://ced.berkeley.edu/ced/students/career/)).

**Office of Undergraduate Advising ([http://ced.berkeley.edu/ced/students/undergraduate-advising/](http://ced.berkeley.edu/ced/students/undergraduate-advising/))**

- Newly-Admitted Students ([https://ced.berkeley.edu/new-admit/](https://ced.berkeley.edu/new-admit/))
- Current Students ([http://ced.berkeley.edu/ced/students/undergraduate-advising/continuing-students/](http://ced.berkeley.edu/ced/students/undergraduate-advising/continuing-students/))
- Graduation and Commencement ([http://ced.berkeley.edu/ced/students/undergraduate-advising/graduation-commencement/](http://ced.berkeley.edu/ced/students/undergraduate-advising/graduation-commencement/))
- Services and Contract ([http://ced.berkeley.edu/ced/students/undergraduate-advising/services-contract/](http://ced.berkeley.edu/ced/students/undergraduate-advising/services-contract/))
- Articulation ([http://ced.berkeley.edu/ced/students/undergraduate-advising/articulation/](http://ced.berkeley.edu/ced/students/undergraduate-advising/articulation/))
- Policies and Resources ([http://ced.berkeley.edu/ced/students/undergraduate-advising/policies-resources/](http://ced.berkeley.edu/ced/students/undergraduate-advising/policies-resources/))
- Forms and Documents ([http://ced.berkeley.edu/ced/students/undergraduate-advising/forms-documents/](http://ced.berkeley.edu/ced/students/undergraduate-advising/forms-documents/))

**Mission**

The College of Environmental Design (CED) Office of Undergraduate Advising:

- **Supports** students holistically as they earn their degree,
- **Advocates** for just and equitable policies and practices,
- **Connects** current and prospective students with resources and opportunities,
- **Fosters** a sense of belonging and community.

**Advising Values**

The CED Office of Undergraduate Advising aspires to the following core values:

**Student-Centered**

We provide support services centered on student self-actualization. We aim to hold a welcoming space in which students are encouraged to explore their minds and their hearts, do their best work, realize their talents and passions, and achieve their goals. We put the student voice and experience first.

**Justice & Equity**

We actively seek to eradicate all forms of individual and institutionalized discrimination and oppression. We aim to provide students with an equitable experience in complete appreciation of their identities, economic status, and immigration status.

**Health & Well-Being**

We strive to build and sustain a culture in which our community can thrive in all aspects of life: intellectual, emotional, social, physical, occupational, spiritual and environmental.
Courage & Vulnerability
By learning from our own experiences, educating ourselves on developments in the field, collaborating with our communities, and taking strategic risks, we aim to improve our advising services and the student experience. We are committed to continuous self-reflection, growth, and development.

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 Chican@/Latin@ Architecture Student Association (CASA), Global Architecture Brigades, and more. For information regarding student groups, please see the Getting Involved page of the CED website (http://ced.berkeley.edu/ced/students/undergraduate-advising/getting-involved/#orgs).

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 (http://studyabroad.berkeley.edu/).

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. For further information, please see the CED Career Services website (http://ced.berkeley.edu/ced/students/career/).

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 (http://ced.berkeley.edu/ced/students/prizes/).

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 (http://ced.berkeley.edu/events-media/events/).

CED on Facebook (https://www.facebook.com/groups/59611725522/)

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.