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.
- 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.
- 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/colleges-schools/environmental-design/#choosingamajor) 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: Six Courses

Upper Division Sustainable Environmental Design Core: Nine Courses

Recommended Sustainable Environmental Design Area Concentrations

Lower Division Major Requirements: Freshman and Sophomore Year

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENV DES 110</td>
<td>Designing Sustainability</td>
<td>3</td>
</tr>
<tr>
<td>LD ARCH 12</td>
<td>Environmental Science for Sustainable Development</td>
<td>4</td>
</tr>
<tr>
<td>MATH 16A</td>
<td>Analytic Geometry and Calculus</td>
<td>3-4</td>
</tr>
<tr>
<td>or MATH 1A</td>
<td>Calculus</td>
<td></td>
</tr>
<tr>
<td>STAT 2</td>
<td>Introduction to Statistics (or higher)</td>
<td>4</td>
</tr>
<tr>
<td>or STAT C8</td>
<td>Foundations of Data Science</td>
<td></td>
</tr>
<tr>
<td>PHYSICS 7A</td>
<td>Physics for Scientists and Engineers</td>
<td>4</td>
</tr>
<tr>
<td>or PHYSICS 8A</td>
<td>Introductory Physics</td>
<td></td>
</tr>
<tr>
<td>ENVECON C1/</td>
<td>Introduction to Environmental Economics and Policy</td>
<td>4</td>
</tr>
<tr>
<td>ECON C3</td>
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</tbody>
</table>

(ECON 1 or 2: permission needed from SED Advisor)

Upper Division Sustainable Environmental Design Core (Courses Inside CED)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>ARCH 140</td>
<td>Energy and Environment</td>
<td>4</td>
</tr>
<tr>
<td>ARCH 142</td>
<td>Sustainability Colloquium</td>
<td>2</td>
</tr>
<tr>
<td>or ARCH 242</td>
<td>Sustainability Colloquium</td>
<td></td>
</tr>
<tr>
<td>CY PLAN 119</td>
<td>Planning for Sustainability</td>
<td>3-4</td>
</tr>
<tr>
<td>or CY PLAN 140</td>
<td>Urban Design: City-Building and Place-Making</td>
<td></td>
</tr>
<tr>
<td>ENV DES 100</td>
<td>The City: Theories and Methods in Urban Studies</td>
<td>4</td>
</tr>
<tr>
<td>ENV DES 102</td>
<td>Climate Change and City Planning: Adaptation and Resilience</td>
<td>3</td>
</tr>
<tr>
<td>ENV DES 104</td>
<td>Design Frameworks</td>
<td>3</td>
</tr>
<tr>
<td>ENV DES 106</td>
<td>Sustainable Environmental Design Workshop</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>or LD ARCH 12</td>
<td>Sustainable Landscapes and Cities</td>
<td></td>
</tr>
<tr>
<td>LD ARCH/GEOG</td>
<td>Geographic Information Systems</td>
<td>4</td>
</tr>
<tr>
<td>C118</td>
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</tbody>
</table>

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>
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</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>
<tr>
<td>ESPM 50AC</td>
<td>Introduction to Culture and Natural Resource Management</td>
<td>4</td>
</tr>
<tr>
<td>ESPM 102C</td>
<td>Resource Management</td>
<td>4</td>
</tr>
<tr>
<td>ESPM 102D</td>
<td>Climate and Energy Policy</td>
<td>4</td>
</tr>
<tr>
<td>ESPM 117</td>
<td>Urban Garden Ecosystems</td>
<td>4</td>
</tr>
<tr>
<td>LD ARCH 122</td>
<td>Hydrology for Planners</td>
<td>4</td>
</tr>
</tbody>
</table>
Sustainable Environmental Design

LD ARCH 289  Applied Remote Sensing (instructor consent required)  3

**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 124A  3-D Computer Technology  2
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  Urban Design: City-Building and Place-Making  3
DES INV 190  Special Topics in Design Innovation  1-4
ENV DES 104  Design Frameworks  3
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 College Requirements, please refer to the College of Environmental Design (http://guide.berkeley.edu/undergraduate/colleges-schools/environmental-design/#collegerequirements).

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.

<table>
<thead>
<tr>
<th>Fall</th>
<th>Units</th>
<th>Spring</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENV DES 1</td>
<td>3 Reading &amp; Composition A</td>
<td>4-6</td>
<td></td>
</tr>
<tr>
<td>ENV DES 110</td>
<td>3 ENV DES 4A, 4B, or 4C (2 of 3 required for graduation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD ARCH 12 (Fills Breadth #1, BS)</td>
<td>4 PHYSICS 8A (Fills Breadth #2, PS)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>MATH 16A or 1A</td>
<td>3-4 Breadth #3 (not recommended if taking 6 unit R&amp;C A)</td>
<td>3</td>
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</table>

Total Units: 102-119

Students must complete 120 units to graduate.

**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

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: Alecia Suazo
250 Wurster Hall
asuazo@berkeley.edu

Landscape Architecture Major Advisor: Kristian Dawson
Sustainable Environmental Design
250 Wurster Hall
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Sustainable Environmental Design Major Advisor: Heather Grothjan
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College Evaluator: Heather Grothjan
250 Wurster Hall
heather.grothjan@berkeley.edu

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

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
cedadvising@berkeley.edu

CED Career Services
The CED Career Services Center (CSC) offers personalized career
advising, 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/).

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:

• 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.