

Proposed Updated Description and Requirements for:

UC Davis Minor in “Sustainability in the Built Environment (ESBE)”

Offered by the Department of Civil and Environmental Engineering
2015 Ghausi Hall ♦ civiladvising@ucdavis.edu

The built environment plays an integral role in meeting society’s most basic needs of shelter, security, mobility, community, and water and waste treatment, but it also contributes significantly to the sustainability challenges of climate change, pollution, resource consumption, and land use. As society and government policy increase pressure to reduce the environmental impacts of our everyday activities, individuals must increasingly understand how the built environment they design and maintain fits into the complex environmental and human systems in which we live. This minor provides a guiding framework for educating individuals who will design and maintain our future built environment in the challenges and potential solutions for improved sustainability.

The minor is designed to develop awareness of students in the three core themes of sustainability: *Engineering & Science*, *Social Context*, and *Policy & Economics*. The aim is both to foster the social context of engineering and to attract students from a range of departments and programs across campus to grow trans-disciplinary interactions. Students must take the required courses EC1123 Urban Systems and Sustainability as well as electives as specified in the three core themes.

The minor is designed to attract students from a range of departments and programs across campus, including, Environmental Science and Policy, Plant Sciences, Landscape Architecture, Design, Engineering, Community and Regional Development, Anthropology, Agriculture and Resource Economics, Atmospheric Science, Environmental Toxicology, Applied Biological Systems Technology, Geology, Hydrology and all disciplines of Engineering. Students enrolled in the minor will acquire fundamental skills and knowledge of the elements and integrated processes necessary for a sustainable built environment.

The online Minor Declaration form is available via the Online Advising Student Information System (OASIS) at <https://students.ucdavis.edu/>.

Course overlap - Please refer to your college’s policies regarding overlap rules.

Transcript notation must be requested no later than the quarter preceding graduation, and will appear as a minor in **Sustainability in the Built Environment**.

Successful completion and transcript notation of the minor requires both a minimum overall UC GPA of 2.0 and a minimum 2.0 GPA for the coursework completed for the minor, with no grade lower than a C- for any course used for the minor.

Please contact the Undergraduate Advisers in the Department of Civil & Environmental Engineering, for more information: civiladvising@ucdavis.edu, (530)752-3425, 2015 Ghausi Hall.

Minor Program Course Offerings in Sustainability in the Built Environment

Total units for the minor: 18 units.

To complete this minor a student is required to:

1. Take ECI 123 (4 units); and
2. Take an additional 3 courses, of at least 3 units each, in each of 3 core thematic areas of the minor: Engineering & Science, Social Context, and Policy & Economics; and
3. Take at least 1 additional course in any of the 3 core thematic areas of the minor (can be any number of units); and
4. Complete at least 18 units of coursework from the core thematic areas of the minor. May include 1-3 units of ECI 198 sustainable design project, by approval of advisor.

All courses must be taken for a letter grade. No grade lower than a C- will be accepted. Up to 4 of the units can be lower division, all other units must be upper division. Substitute courses in the thematic areas may be proposed by students for the minor and will be considered on a case-by-case basis.

Minor Advisors: Frank Loge (Civil & Environmental Engineering), Alissa Kendall (Civil & Environmental Engineering), Colleen Bronner (Civil & Environmental Engineering), Sabbie Miller (Civil & Environmental Engineering), Alexander Forrest (Civil & Environmental Engineering), Heather Bischel (Civil & Environmental Engineering)

One required core course (4 units):

Dept	Course #	Title	Units	Prerequisites/Enrollment Restrictions
ECI	123	Urban Systems and Sustainability	4	Upper division standing; pass 1 ECIV majors only

At least one course from the following list (Engineering & Science):

Dept	Course #	Title	Units	Prerequisites/Enrollment Restrictions
ECI	40	Introduction to Environmental Engineering	4	CHE 2B; Pass 1 open to COE students only
ECI	125	Building Energy Performance	4	Upper division standing in Engineering
ECI	140A	Environmental Analysis of Aqueous Systems	4	CHE 2B w/ C- or better; Pass 1 open to EENV students only
ECI	140B	Aquatic Chemistry	4	CHE 2B w/ C- or better
ECI	143	Green Engineering Design & Sustainability	4	Upper division standing; Pass 1 ECIV majors only
ECI	149	Air Pollution	4	MAT 21D & 22B; CHE 2B, ECI 100 or ENG 103 both w/ C- or better
ECI	155	Water Resources Engineering Planning	4	ENG 106 or ECN 1A; ECI 114
ECI	163	Energy and Environmental Aspects of Transportation	4	ECN 1A or ENG 106
ECI	165	Transportation Policy	3	
ENG	188	Sci. Tech. Sustainable Power Generation	4	Upper division standing, PHY 7C or 9C
ATM	116	Climate Change	3	UWP 1 or eqv.; consent of instructor
DES	127A	Sustainable Design	4	DES 1. Priority to DES majors
DES	127B	Studio Practice in Sustainable Design	4	DES 1, 127A (or consent of instructor). Priority to DES majors
ETX	101	Principles of Environmental Toxicology	4	CHE 8B or CHE 118B or CHE 128B, and BIS 2A
LDA	140	Green Building, Design, and Materials	4	LDA 50, 70; Pass 1 Sustainable Environmental Design Majors only
DES	156	Graphitecture	4	DES 1, 14, 15, 16; Pass 1 majors only
GEL	130	Non-Renewable Natural Resources	3	GEL 1 or GEL 50

At least one course from the following list (Social Context):

Dept	Course #	Title	Units	Prerequisites/Enrollment Restrictions
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ANT/ESP	101	Ecology, Nature and Society	4	ANT 1 or ANT2, or ESP 30, or EVE 100, or BIS 101
ANT	104N	Cultural Politics of the Environment	4	ANT 2 or consent of instructor
CRD	142	Rural Change in the Industrialized World	4	CRD 1 or 2 or SOC 1 or ANT 2
CRD	149	Community Development Perspectives on Environmental Justice	4	
CRD	154	Social Theory and Community Change	4	CRD 1 or SOC 1 or ANT 2
CRD	158	Small Community Governance	4	CRD 1 or SOC 1 or POL 1
CRD	172	Social Inequality: Issues and Innovations	4	CRD 1 or 2 or SOC 1 or ANT 2; Upper division standing recommended
LDA	003	Sustainable Development: Theory and Practice	4	
PLS	162	Urban Ecology	3	Course in general or plant ecology

At least one course from the following list (Policy & Economics):

Dept	Course #	Title	Units	Prerequisites/Enrollment Restrictions
ARE	175	Natural Resource Economics	4	ARE 100B or ECN 100 or equivalent; Pass 1 AMGE, EPAP, and GARE majors
ARE	176	Environmental Economics	4	ARE 100B or ECN 100; Pass 1 AMGE majors
ESP	161	Environmental Law	4	Upper division standing; one course in environmental science or political science recommended.
ESP	162	Environmental Policy	4	ECN 1A or ECN 1AV; Pass 1 ESM and EPAP majors
ESP	171	Urban and Regional Planning	4	ESP 1 recommended
PLS	150	Sustainability and Agroecosystem Management	4	SSC 10, CHE 2A, (PLS 2 or BIS 2C)
ESP	173	Land Use and Growth Controls	4	Upper division standing; one course in environmental policy