ENVIRONMENTAL ENGINEERING, BACHELOR OF SCIENCE

College of Engineering

Environmental engineers are responsible for designing processes and infrastructure to ensure society has access to safe water, clean air, and healthy ecosystems. Environmental engineers apply knowledge from physics, chemistry, biology and the social sciences to problems in a variety of areas including water & wastewater treatment and ecosystem remediation, analysis of chemical fate and transport in the natural environment, and modeling of hydrologic & atmospheric flows. As climate change creates new challenges, such as in the form of droughts and intense weather events, the field of environmental engineering evolves to meet society's needs. As an environmental engineering student at UC Davis, you will gain skills that enable you to design sustainable solutions for society.

The Environmental Engineering (BS) program is accredited by the Engineering Accreditation Commission of ABET (https://www.abet.org/) under the commission's General Criteria and Program Criteria for Environmental Engineering and Similarly Named Engineering Programs.

Suggested Advisors

Environmental Engineering: H.N. Bischel, C.E. Bronner, C. D. Cappa, R. Corsi, C. DeFinnda, A. Kendall, M.J. Kleeman, F.J. Loge, J. Pena, T.M. Young
Water Resources: F.A. Bombardelli, A. Escriva-Bou, A.L. Forrest, J.D. Herman, M.L. Kavvas, V.L. Morales, H.J. Oldroyd, B.A. Younis

Students are encouraged to adhere carefully to all prerequisite requirements. The instructor is authorized to drop students from a course for which stated prerequisites have not been completed.

The major requirements below are in addition to meeting University Degree Requirements (https://catalog.ucdavis.edu/undergraduate-education/university-degree-requirements/) & College Degree Requirements (https://catalog.ucdavis.edu/undergraduate-education/college-degree-requirements/); unless otherwise noted. The minimum number of units required for the Environmental Engineering Bachelor of Science is 144.

Code	Title	Units
Lower Division Required Courses		
Mathematics		
MAT 021A	Calculus	4
MAT 021B	Calculus	4
MAT 021C	Calculus	4
MAT 021D	Vector Analysis	4
MAT 022A	Linear Algebra	3
MAT 022B	Differential Equations	3
Chemistry		
CHE 002A	General Chemistry	5
CHE 002B	General Chemistry	5
CHE 008A	Organic Chemistry: Brief Course	2
Physics		
PHY 009A	Classical Physics	5
PHY 009B	Classical Physics	5
Choose GEL 050 & GEL 050L or ATM 060:		*4-5*
GEL 050 & 050L	Physical Geology and Physical Geology Laboratory	
OR		
ATM 060	Introduction to Atmospheric Science	
Biological Sciences		
BIS 002A	Introduction to Biology: Essentials of Life on Earth	5
Engineering		
ENG 003	Introduction to Engineering Design	4
or ENG 003Y	Introduction to Engineering Design	
ENG 006	Engineering Problem Solving	4
or ECS 032A	Introduction to Programming	
or ECS 032AV	Introduction to Programming	
ENG 035	Statics	4
Civil & Environmental Engineering		
Choose one: [1]		4
ECI 003	Civil & Environmental Infrastructure & Society (First- & Second-year students.)	
OR		
ECI 101	Transfer Transition for Civil & Environmental Engineering (Transfer students & Juniors.)	
OR		
ECI Elective: 4 units of upper division ECI electives; seniors who did not take ECI 003 nor ECI 101.		
ECI 016	Spatial Data Analysis	2
ECI 040	Introduction to Environmental Engineering	4
Lower Division Composition/Writing; choose one; a grade of a C- or better is required		*4*
COM 001	Major Works of the Ancient World	
COM 002	Major Works of the Medieval & Early Modern World	
COM 003	Major Works of the Modern World	
COM 004	Major Works of the Contemporary World	
ENL 003	Introduction to Literature	
or ENL 003V	Introduction to Literature	
NAS 005	Introduction to Native American Literature	
UWP 001	Introduction to Academic Literacies	
or UWP 001V	Introduction to Academic Literacies: Online	
or UWP 001Y	Introduction to Academic Literacies	
Lower Division Required Courses Subtotal		79-80
Upper Division Required Courses		
Microbiology		
MIC 102	Introductory Microbiology	3
Engineering		
ENG 106	Engineering Economics	4
Civil & Environmental Engineering		
ECI 100	Introduction to Fluid Mechanics for Civil & Environmental Engineers	4

ECI 114	Probabilistic Systems Analysis for Civil & Environmental Engineers	4
ECI 115	Computer Methods in Civil & Environmental Engineering	4
ECI 123	Urban Systems & Sustainability	4
ECI 140A	Environmental Analysis of Aqueous Systems	4
ECI 140B	Chemical Principles for Environmental Engineers	4
ECI 140CN	Water & Wastewater Treatment System Design	4
ECI 141	Engineering Hydraulics	3
ECI 141L	Engineering Hydraulics Laboratory	1
ECI 144	Groundwater Systems Design	4
ECI/ATM 149N	Air Pollution	4
ECI 149L	Air Pollution Lab	1
ECI 193A	Civil & Environmental Engineering Senior Design	4
ECI 193B	Civil & Environmental Engineering Senior Design	4
Choose one:		4
ECI 153	Deterministic Optimization & Design	
ECI 155	Water Resources Engineering Planning	
Choose one:		4
ECI 142	Engineering Hydrology	
ECI 145	Hydraulic Structure Design	
ECI 146	Water Resources Simulation	
ECI 153	Deterministic Optimization & Design	
ECI 155	Water Resources Engineering Planning	
ECI 189A	Selected Topics in Civil Engineering: Environmental Engineering	
ECI 189B	Selected Topics in Civil Engineering: Hydraulics & Hydrologic Engineering	
ECI 189I	Selected Topics in Civil Engineering: Water Resources Engineering	
ECI 189J	Selected Topics in Civil Engineering: Water Resources Planning	
ECI 198	Directed Group Study [2]	
ECI 199	Special Study for Advanced Undergraduates [2]	
Upper Division Composition Requirement		
Choose one; a grade of C- or better is required:		0-4
UWP 101	Advanced Composition	
or UWP 001V	Introduction to Academic Literacies: Online	
or UWP 001Y	Introduction to Academic Literacies	
UWP 102E	Writing in the Disciplines: Engineering	
UWP 102G	Writing in the Disciplines: Environmental Writing	
UWP 104A	Writing in the Professions: Business Writing	
or UWP 104AV	Writing in the Professions: Business Writing	
or UWP 104AY	Writing in the Professions: Business Writing	
UWP 104E	Writing in the Professions: Science	
UWP 104T	Writing in the Professions: Technical Writing	
Passing the Upper Division Composition Exam.		
Upper Division Required Courses Subtotal		64-68
Total Units		**144-148**

[1]

ECI 003 is designed for lower division. Transfer students and junior-level students will take ECI 101 if they have not taken ECI 003. Students who change into the major and who do not take either of these courses by their senior year will substitute 4 units of additional letter-graded upper division Civil & Environmental Engineering (ECI) coursework.

[2]

A total of 4 units of ECI 198 & ECI 199 units may be counted for major requirements.