

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 Bachelor of Science 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. Escrivá-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		
<i>Mathematics</i>		
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
<i>Chemistry</i>		
CHE 002A	General Chemistry	5
CHE 002B	General Chemistry	5
CHE 008A	Organic Chemistry: Brief Course	2

<i>Physics</i>		
PHY 009A	Classical Physics	5
PHY 009B	Classical Physics	5
<i>Choose GEL 050 & GEL 050L or ATM 060:</i>		4-5
GEL 050 & 050L	Physical Geology and Physical Geology Laboratory	
OR		
ATM 060	Introduction to Atmospheric Science	
<i>Biological Sciences</i>		
BIS 002A	Introduction to Biology: Essentials of Life on Earth	5
<i>Engineering</i>		
ENG 003 or ENG 003Y	Introduction to Engineering Design Introduction to Engineering Design	4
ENG 006 or ECS 032A or ECS 032AV	Engineering Problem Solving Introduction to Programming Introduction to Programming	4
ENG 035	Statics	4
<i>Civil & Environmental Engineering</i>		
<i>Choose one:</i> 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
<i>Lower Division Composition/Writing; choose one; a grade of a C- or better is required</i>		
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 or ENL 003V	Introduction to Literature Introduction to Literature	
NAS 005 or NAS 005V	Introduction to Native American Literature Introduction to Native American Literature	
UWP 001 or UWP 001V or UWP 001Y	Introduction to Academic Literacies Introduction to Academic Literacies: Online Introduction to Academic Literacies	
<i>Lower Division Required Courses Subtotal</i>		79-80
Upper Division Required Courses		
<i>Microbiology</i>		
MMG 102 or MIC 102 DISCON		3
<i>Engineering</i>		
ENG 106	Engineering Economics	4
<i>Civil & Environmental Engineering</i>		

ECI 100	Introduction to Fluid Mechanics for Civil & Environmental Engineers	4	UWP 104E	Writing in the Professions: Science
ECI 114	Probabilistic Systems Analysis for Civil & Environmental Engineers	4	UWP 104T	Writing in the Professions: Technical Writing
ECI 115	Computer Methods in Civil & Environmental Engineering	4		Passing the Upper Division Composition Exam.
ECI 123	Urban Systems & Sustainability	4		Upper Division Required Courses Subtotal
ECI 140A	Environmental Analysis of Aqueous Systems	4		64-68
ECI 140B	Chemical Principles for Environmental Engineers	4	Total Units	144-148
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			
<i>Upper Division Composition Requirement</i>				
Choose one; a grade of C- or better is required:		0-4		
UWP 101	Advanced Composition			
or UWP 101V	Advanced Composition			
or UWP 101Y	Advanced Composition			
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			