

ENVIRONMENTAL ENGINEERING DEGREE REQUIREMENTS 2021-2022 *** LOWER DIVISION ***

Course	Title	Units	Qtr(s)	Offered	Prerequisites & Enrollment Restrictions
MAT 21A*	Calculus <i>D</i>	4	F	W S	2 yrs high school algebra, plane trig, plane & analysis. Geometry & placement by exam
MAT 21B*	Calculus <i>D</i>	4	F	W S	MAT 21A w/ C- or better
MAT 21C*	Calculus <i>D</i>	4	F	W S	MAT 21B w/ C- or better
MAT 21D*	Vector Analysis <i>D</i>	4	F	W S	MAT 21C w/ C- or better
MAT 22A*	Linear Algebra	3	F	W S	MAT 21C w/ C- or better, Matlab/ENG 6 (or MAT 22AL concurrently)
MAT 22B*	Differential Equations	3	F	W S	MAT 22A w/ C- or better
PHY 9A*	Classical Physics <i>LD</i>	5	F	W S	MAT 21B
PHY 9B*	Classical Physics <i>LD</i>	5	F	W S	PHY 9A, MAT 21C; MAT 21D (MBTC)
CHE 2A*	General Chemistry <i>LD</i>	5	F	W S	Placement by exam score
CHE 2B*	General Chemistry <i>LD</i>	5	F	W S	CHE 2A w/ C- or better
CHE 8A	Organic Chemistry-Brief	2	F	W S	CHE 2B w/ C- or better or CHE 2BH C- or better
ENG 35*	Statics <i>D</i>	4	F	W S	MAT 21D (MBTC), PHY 9A all with C- or better; <i>Pass 1 Engineering only</i>
ECI 3 (SS)	Civil Infrastructure and Society <i>L</i>	4	F	W S	MAT 21A (MBTC) [First yr./Soph course - or replace with 4 units of ECI Elective]
ECI 16 (QL)	Spatial Data Analysis <i>L</i>	2	F	W S	Restricted to Civil and Bio Sys Eng majors
ECI 40 (AH)	Intro to Env. Engineering	4	F	W S	CHE 2B; <i>Pass 1 Engineering only</i>

ATM or GEL elective: select 1 of the following courses (4-5 units required)

ATM 60	Intro Atmospheric Science <i>D</i>	4	F	W S	MAT 21A, PHY 9A
GEL 50-50L	Physical Geology & Lab	3/2	F	W S	High school phys & chem; reduced unit credit if GEL 1 completed

PROGRAMMING requirement: select 1 of the following courses (4 units required)

ENG 6 (QL)	Engineering Problem Solving (Matlab) <i>D</i>	4	F	W S	MAT 21A with C- or better; MAT 21B with C- or better (MBTC)
ECS 32A	Programming & Prob Solving (Python) <i>D</i>	4	F	W S	No credit if took ECS 10, ECS 30 or higher

LOWER DIVISION ENGLISH COMPOSITION requirement: select 1 of the following courses (4 units required) (may not simultaneously fulfill GE topical breadth)

UWP 1, 1V, or 1Y	Expository Writing <i>D</i>	4	F	W S	Compl. of Entry Level Writing Req. (pass with C- or better)
ENL 3 (English)	Introduction to Literature <i>D</i>	4	F	W S	Compl. of Entry Level Writing Req. (pass with C- or better)
COM 1 (Comp Lit)	Bks of West. Cul: Ancient World <i>D</i>	4	F	W S	Compl. of Entry Level Writing Req. (pass with C- or better)
COM 2	Bks of West. Cul: Mid Ages-Enlight <i>D</i>	4	F	W S	Compl. of Entry Level Writing Req. (pass with C- or better)
COM 3	Bks of West. Cul: Modern Crisis <i>D</i>	4	F	W S	Compl. of Entry Level Writing Req. (pass with C- or better)
COM 4	Bks of the Contemporary World <i>D</i>	4	F	W S	Compl. of Entry Level Writing Req. (pass with C- or better)
NAS 5 (Native Amer Std)	Intro to Native American Literature <i>D</i>	4	F	W S	Compl. of Entry Level Writing Req. (pass with C- or better)

GENERAL EDUCATION (GE) requirement: ~8-25 additional units for Civil Engineering majors

GE req. & worksheets can be found at: <https://cee.engineering.ucdavis.edu/undergraduate/majors-minors/civil-engineering> GE may be taken anytime. Complete by graduation.

Minimum Requirements for College of Engineering Change of Major or Double Major:** Please consult with an advisor if you want to change majors

1. Be a registered student & completed at least 1 quarter at UCD (12 units)	2. Have fewer than 135 cumulative units (excluding AP units)
3. Be in good academic standing and meet minimum progress	4. Receive a letter grade for all courses that satisfy engineering degree requirements
5. a) Complete at least the following five courses: MAT 21A, B, C, PHY 9A, and CHE 2A , and b) have a GPA of 2.00 or better in all completed MAT, PHY, BIS, GEL and CHE courses required for your intended major, and receive a C- or better in each of these courses	
6. Have no grade lower than a C- in any completed engineering course required for your intended major(s) taken at UC Davis	7. Have a 2.00 UC GPA in completed engineering courses (exceptions for 2020-2021)
8. Have completed all transfer admission coursework and GPA requirements (3.2 GPA from previous institution(s) for coursework below). See https://www.ucdavis.edu/admissions/transfer/major-requirements-college-engineering for details. For transfer students who have not completed all transfer admission requirements at their previous institution, they must earn a 2.0 GPA or higher in these remaining courses at UC Davis, and receive a C- or better in each of these 15 courses: MAT 21A, B, C, D, MAT 22A, B, CHE 2A, 2B, 2C (2C completed prior to Fall '19) or 8A, PHY 9A, B, ENG 35, Select 1: ENG 6, ECS 30, 32A, Select 1: GEL 50/50L, ATM 60, Select 1: UWP 1, 1V, 1Y, ENL 3, COM 1, 2, 3, 4, NAS 5 .	

**Requirements subject to change. See <https://engineering.ucdavis.edu/advising-faqs> for current requirements.

MINIMUM 2.00 UC GPA and MINIMUM 2.00 ENGINEERING GPA required to receive degree certification.

First-Year Seminar offerings: <http://fys.ucdavis.edu/student/index.html>

First Year (0-44.9 units)				<u>Example Schedule</u>				Sophomore (45-89.9 units)			
Fall		Winter		Spring		Fall		Winter		Spring	
MAT 21A	4	MAT 21B	4	MAT 21C	4	MAT 21D	4	MAT 22A (22A Lab)3(1)		MAT 22B	3
CHE 2A	5	CHE 2B	5	PHY 9A	5	PHY 9B	5	GEL 50/50L or ATM 604-5		ENG 35	4
ECI 3	4	ENL Comp	4	CHE 8A	2	ECI 40	4	GE Elective	4	URE Elective	2
	13	GE Elective	4	GE Elective	4	ECS 32A or ENG 6	4	ECI 16	2	GE Elective	5
			17		15		17		14-15		14

(MBTC) = Course may be taken concurrently *L* = Course has a Lab *D* = Course has a Discussion *URE* = Unrestrictive Elective
GENERAL EDUCATION: *AH*= Arts & Humanities *SS*=Social Science *OL*=Oral Literacy

* = C- or better grade in this course is a prerequisite for most engineering coursework (both lower and upper division). It is always an instructor's option to drop students without the posted prerequisites for their course. Engineering instructors will exercise this option frequently.

ENVIRONMENTAL ENGINEERING DEGREE REQUIREMENTS 2021-2022 *** UPPER DIVISION ***

Course	Title	Units	Otr(s)	Offered	Prerequisites & Enrollment Restrictions	Notes
ECI 100*	Fluid Mechanics for Civil/Env Eng. <i>L</i>	4	F	W	ENG 35, MAT 22B, PHY 9B all with C- or better; <i>Pass 1 ECIV/EENV only</i>	
ENG 106 (<i>SS & SL</i>)	Engineering Economics	4		W	Upper division standing in Engineering	
ECI 114 (<i>QL</i>)	Probabilistic Sys. Analy. for Civ. Engrs.	4		W S	MAT 21C w/ C- or better; <i>Pass 1 ECIV/EENV only</i>	
ECI 115	Computer Methods in Civil Eng <i>L</i>	4		W S	ENG 6 or ECS 30 or ECS 32A w/ C- or better; MAT 22B C- or better	
ECI 140A*	Environmental Analysis of Aqueous Systems <i>L</i>	4	F		CHE 2B w/ C- or better; ECI 40 (MBTC); <i>Pass 1 open to env. engineering</i>	
ECI 140B*	Chem. Princip. for Environmental Engineering	4	F		CHE 2B w/ C- or better	
ECI 140C*	Bio. Princip. for Environmental Engineering	4		W	ECI 140B w/ C- or better; ECI 40	
ECI 140D*	Water & Wastewater Treatment Sys. Design <i>L</i>	4		S	ECI 140B & ECI 140C w/ C- or better; ECI 40	
ECI 123 (<i>SS, ACGH & DD</i>)	Urban Systems & Sustainability	4		S	Upper division standing; <i>Pass 1 ECIV/EENV only</i>	
ECI 149*	Air Pollution <i>L</i>	4	F		MAT 21D & 22B; CHE 2B & ECI 100 or ENG 103 both w/ C- or better	
ECI 141*-141L	Engineering Hydraulics & Lab	3/1	F	W	ECI 100 or ENG 103 w/ C- or better; <i>Pass 1 ECIV/EENV only</i>	
ECI 144	Groundwater Systems Design	4		S	ECI 141	

Selective Elective (SE): Select 1 of the following courses (4 units required)

ECI 142	Engineering Hydrology	4	F		ECI 141 (MBTC); <i>engineering only</i>	
ECI 145	Hydraulic Structure Design <i>L/D</i>	4		not offered 21-22	ECI 141 w/ C- or better	
ECI 146	Water Resources Simulation <i>D</i>	4		W	ECI 141 w/C- or better	
ECI 153	Deterministic Optimization & Design <i>L</i>	4	F		MAT 21C, 22A, programming course	
ECI 155 (<i>SS</i>)	Water Resources Engrg. Planning	4		not offered 21-22	ENG 106 or ECN 1A; ECI 114	

Senior Design Experience (SDE) Requirement: (8 units required) courses must be taken consecutively & must be in final year of study

ECI 193A (<i>OL & WE</i>)	ECI Senior Design <i>L</i>	4		W	ECI 140D & ECI 141/141L both w/C- or better & graduating w/in 1 yr	
ECI 193B (<i>OL & VL</i>)	ECI Senior Design <i>L</i>	4		S	ECI 193A – In Progress Grading for ECI 193A&B – final grades posted in Spring	

UPPER DIVISION ENGLISH COMPOSITION requirement: satisfy by Exam (0 units) - or take ONE of the UWP courses listed below (4 units)

English Composition Exam (given 4th Saturday of each quarter – no more than 2 chances to pass the exam – low pass rate in recent offerings)

Exam details at: <http://writing.ucdavis.edu/compexam>

UWP 101 or 101Y	Advanced Composition <i>D</i>	4	F	W	S	One course: UWP 1, 1V, 1Y, ENL 3, COM 1, 2, 3, 4, NAS 5; Upper div. standing (pass with C- or better)
UWP 102E or 102EY	Writing in the Disciplines: <u>Engineering</u> <i>D</i>	4	F	W	S	One course: UWP 1, 1V, 1Y, ENL 3, COM 1, 2, 3, 4, NAS 5; Upper div. standing (pass with C- or better)
UWP 102G or 102GY	Writing in the Disciplines: <u>Environmental</u> <i>D</i>	4			S	One course: UWP 1, 1V, 1Y, ENL 3, COM 1, 2, 3, 4, NAS 5; Upper div. standing (pass with C- or better)
UWP 104A or 104AY	Writing in the Professions: <u>Business</u> <i>D</i>	4	F	W	S	One course: UWP 1, 1V, 1Y, ENL 3, COM 1, 2, 3, 4, NAS 5; Upper div. standing (pass with C- or better)
UWP 104E or 104EY	Writing in the Professions: <u>Science</u> <i>D</i>	4	F	W	S	One course: UWP 1, 1V, 1Y, ENL 3, COM 1, 2, 3, 4, NAS 5; Upper div. standing (pass with C- or better)
UWP 104T or 104TY	Writing in the Professions: <u>Technical</u> <i>D</i>	4	F	W	S	One course: UWP 1, 1V, 1Y, ENL 3, COM 1, 2, 3, 4, NAS 5; Upper div. standing (pass with C- or better)

Junior (90-134.9 units)				<u>Example Schedule</u>				Senior (135 or more units)					
<i>Fall</i>		<i>Winter</i>		<i>Spring</i>				<i>Fall</i>		<i>Winter</i>		<i>Spring</i>	
ECI 100	4	URE	4	ECI 140D	4			Upper Div Comp	4	ECI 193A	4	ECI 193B	4
ECI 140A	4	ECI 140C	4	ECI 123	4			ECI 149	4	ECI 115	4	ECI 144	4
ECI 140B	4	ENG 106	3	ECI 114	4			URE	4	SE	4	URE	4
URE	<u>4</u>	ECI 141&L	<u>4</u>	URE	<u>4</u>			URE	<u>4</u>	URE	<u>3</u>		12
	16		15		16				16		15		

L = Course has a Lab

D = Course has a Discussion

URE = Unrestrictive Elective

SE = Selective Elective

GENERAL EDUCATION: *SS*=Social Science *ACGH*= American Cultures, Governance & History *DD*=Domestic Diversity

VL= Visual Literacy *QL*= Quantitative Literacy *WE*= Writing Experience *SL*= Scientific Literacy

* = C- or better grade in this course is a prerequisite for some engineering coursework. It is always an instructor's option to drop students without the posted prerequisites for their course. Engineering instructors will exercise this option frequently.

The Environmental Engineering degree is NOT (YET) accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>. We are going up for accreditation in the 2021-2022 academic year.

We recommend students interested in Environmental Engineering consider the Civil & Environmental Engineering double major. (Civil Engineering is accredited by ABET.)

Close to Graduation? Two separate websites to visit – one for degree certification/diploma and one to participate in a ceremony:

- 1. Graduation Online Application** (apply qtr. before completing coursework): <http://registrar.ucdavis.edu/graduation>
- 2. Participate in Commencement** (June or December ceremony): <http://commencement.ucdavis.edu/registration.html>

MINIMUM 2.00 UC GPA and MINIMUM 2.00 ENGINEERING GPA required to receive degree certification.

Academic Advisor Contact Information & Useful Websites:

Civil & Environmental Engineering Program Advisor & Peer Advisor: civiladvising@ucdavis.edu, 2009 Ghausi Hall
College of Engineering Undergraduate Education Office, 1050 Kemper Hall Main phone number: 752-1979 Engineering Peer Advisors: 752-0553

Civil & Environmental Engineering: https://cee.engineering.ucdavis.edu/	OASIS Student Advising: http://oasis.ucdavis.edu
College of Engineering: http://engineering.ucdavis.edu	Advising Appointment System: https://appointments.ucdavis.edu/
Office of the Registrar (Online Catalog & more): http://registrar.ucdavis.edu	Schedule Builder: http://sisweb.ucdavis.edu/
Class Search Tool: http://classes.ucdavis.edu	Equivalent courses at Community Colleges: http://www.assist.org
Summer Sessions: http://summer-sessions.ucdavis.edu	Internship & Career Center: http://icc.ucdavis.edu
Undergrad Research Center: http://undergraduateresearch.ucdavis.edu	EIT/FE Exam http://ncees.org/engineering/fe/
Study Abroad: http://studvabroad.ucdavis.edu/	My Degree: https://mydegree.ucdavis.edu

Academic Standing is determined by **grade point average (GPA)** from both the most recent quarter **and** the cumulative/UC GPA at the end of Fall, Winter and Spring Quarter; as well as units completed toward **Minimum Progress (MP)** (must complete 12 units per quarter). **Good Standing** = GPA of 2.00 or above (quarterly and cumulatively) and satisfaction of MP.

Academic Probation (AP) = GPA less than 2.00, but not less than 1.50, for the quarter, and/or GPA less than 2.00 for all courses taken within UC, and/or MP less than 12 units per quarter.

Subject to Disqualification (SD) = GPA less than 1.50 for the quarter, and/or GPA less than 1.50 for all courses taken within UC, and/or MP less than 12 units per quarter.

Course Repeat Policy - Students may repeat one time for credit a course in which they received a D+, D, D-, F or NP. The second (i.e. repeat) grade replaces the first grade in the GPA, for a maximum of 16 units (course must be repeated at UC Davis). After 16 units, both grades remain in the GPA. Both grades remain on the transcript for all repeated coursework. Repeating the same course more than once requires approval via a Multiple Repeat Petition, available on [OASIS](https://oasis.ucdavis.edu/).

The Environmental Engineering degree is NOT (YET) accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>. We are going up for accreditation in the 2021-2022 academic year.

We recommend students interested in Environmental Engineering consider the Civil & Environmental Engineering double major. (Civil Engineering is accredited by ABET.)

‘ENVIRONMENTAL ENGINEERING FACULTY 2021-2022 Additional info: <http://cee.engr.ucdavis.edu/people/faculty-directory/>

Heather Bischel	3109 Ghausi Hall, 752-6772, hbischel@ucdavis.edu
Fabian Bombardelli	3105 Ghausi Hall, 752-0949, fabombardelli@ucdavis.edu
Colleen Bronner	3118 Ghausi Hall, 752-7523, cebronner@ucdavis.edu (Department Vice Chair/Undergraduate Adviser)
Christopher Cappa	3135 Ghausi Hall, 752-8180, cdcappa@ucdavis.edu (Department Chair)
Jeannie L. Darby	3134 Ghausi Hall, 752-5670, jdarby@ucdavis.edu
Alex Forrest	3155 Ghausi Hall, 754-9428, alforrest@ucdavis.edu
Thomas Harter	125 Veihmeyer Hall, 752-2709, thharter@ucdavis.edu
Jonathan Herman	3138 Ghausi Hall, 752-8870, jdherman@ucdavis.edu
M. Levent Kavvas	3165 Ghausi Hall, 752-2518, mlkaccas@ucdavis.edu
Alissa Kendall	3167 Ghausi Hall, 752-5722, amkendall@ucdavis.edu
Maureen Kinyua	3127 Ghausi Hall, 752-7857, mnkinyua@ucdavis.edu
Michael J. Kleeman	3125 Ghausi Hall, 752-8386, mjkleeman@ucdavis.edu
Frank J. Loge	3163 Ghausi Hall, 754-2297, fjloge@ucdavis.edu
Jay R. Lund	3023 Ghausi Hall, 752-5671, jrlund@ucdavis.edu
Mark Modera	3120 Ghausi, 754-7671, mpmodera@ucdavis.edu
Veronica Morales	3136 Ghausi Hall, 752-4008, vermorales@ucdavis.edu
Holly Oldroyd	3129 Ghausi Hall, 752-8819, hjoldroyd@ucdavis.edu
Jasquelin Pena	3139 Ghausi Hall, 754-1915, pena@ucdavis.edu
S. Geoffrey Schladow	3111 Ghausi Hall, 752-6932, gschladow@ucdavis.edu
Samuel Sandoval Solis	135 Veihmeyer Hall, 750-9722, samsandoval@ucdavis.edu
Anthony Wexler	2046 Bainer, 754-6558, aswexler@ucdavis.edu
Thomas M. Young	3113 Ghausi Hall, 754-9399, tyoung@ucdavis.edu
Bassam A. Younis	3107 Ghausi Hall, 754-6417, bayounis@ucdavis.edu