

**ENVIRONMENTAL ENGINEERING DEGREE REQUIREMENTS 2020-2021 \*\*\* LOWER DIVISION \*\*\***

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

<b>ATM or GEL elective: select 1 of the following courses (4-5 units required)</b>				
<b>ATM 60</b>	Intro Atmospheric Science <i>D</i>	4	F	MAT 21A, PHY 9A
<b>GEL 50-50L</b>	Physical Geology & Lab	3/2	F W S	High school phys & chem; reduced unit credit if GEL 1 completed

<b>PROGRAMMING requirement: select 1 of the following courses (4 units required)</b>				
<b>ENG 6</b>	Engineering Problem Solving (Matlab) <i>D</i>	4	F W S	MAT 21A with C- or better; MAT 21B with C- or better (MBTC)
<b>ECS 32A</b>	Programming & Prob Solving (Python) <i>D</i>	4	F W S	No credit if took ECS 10, ECS 30 or higher

<b>LOWER DIVISION ENGLISH COMPOSITION requirement: select 1 of the following courses (4 units required) (may not simultaneously fulfill GE topical breadth)</b>				
<b>UWP 1, 1V, or 1Y</b>	Expository Writing <i>D</i>	4	F W S	Compl. of Entry Level Writing Req. (pass with C- or better)
<b>ENL 3 (English)</b>	Introduction to Literature <i>D</i>	4	F W S	Compl. of Entry Level Writing Req. (pass with C- or better)
<b>COM 1 (Comp Lit)</b>	Bks of West. Cul: Ancient World <i>D</i>	4	F W S	Compl. of Entry Level Writing Req. (pass with C- or better)
<b>COM 2</b>	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)
<b>COM 3</b>	Bks of West. Cul: Modern Crisis <i>D</i>	4	F W S	Compl. of Entry Level Writing Req. (pass with C- or better)
<b>COM 4</b>	Bks of the Contemporary World <i>D</i>	4	F W S	Compl. of Entry Level Writing Req. (pass with C- or better)
<b>NAS 5 (Native Amer Std)</b>	Intro to Native American Literature <i>D</i>	4	F W S	Compl. of Entry Level Writing Req. (pass with C- or better)

<b>GENERAL EDUCATION (GE) requirement: ~8-25 additional units for Civil Engineering majors</b>				
GE req. & worksheets can be found at: <a href="https://cee.engineering.ucdavis.edu/undergraduate/majors-minors/civil-engineering">https://cee.engineering.ucdavis.edu/undergraduate/majors-minors/civil-engineering</a> GE may be taken anytime. Complete by graduation.				

<b>Minimum Requirements for College of Engineering Change of Major or Double Major**:</b> 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: <b>MAT 21A, B, C, PHY 9A, and CHE 2A</b> , and b) have a <b>GPA of 2.00</b> or better in all completed <b>MAT, PHY, BIS, and CHE</b> courses required for your intended major, and receive a <b>C- or better</b> in each of these courses				
6. Have <b>no grade lower than a C-</b> in any completed <b>engineering course</b> required for your intended major(s) taken at UC Davis		7. Have a <b>2.00 UC GPA</b> in completed <b>engineering courses</b>		
8. Have completed all transfer admission coursework and GPA requirements ( <b>3.2 GPA from previous institution(s) for coursework below</b> ). See <a href="https://www.ucdavis.edu/admissions/transfer/major-requirements-college-engineering">https://www.ucdavis.edu/admissions/transfer/major-requirements-college-engineering</a> 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: <b>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.</b>				
**Requirements subject to change. See <a href="http://engineering.ucdavis.edu/undergraduate/advising/">http://engineering.ucdavis.edu/undergraduate/advising/</a> 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	MAT 21B	MAT 21C	4	MAT 21D	MAT 22A (22A Lab)3(1)	MAT 22B	4	3
CHE 2A	CHE 2B	PHY 9A	5	PHY 9B	GEL 50/50L or ATM 604-5	ENG 35	5	4
ECI 3	ENL Comp	CHE 8A	4	ECI 40	GE Elective	URE Elective	4	2
	GE Elective	GE Elective	4	ECS 32A or ENG 6	ECI 16	GE Elective	2	5
			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 2020-2021 \*\*\* UPPER DIVISION \*\*\***

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

<b>Selective Elective (SE): Select 1 of the following courses (4 units required)</b>						
<b>ECI 142</b>	Engineering Hydrology	4	F		ECI 141 (MBTC); <i>engineering only</i>	
<b>ECI 145</b>	Hydraulic Structure Design <i>LD</i>	4		not offered 20-21	ECI 141 w/ C- or better	
<b>ECI 146</b>	Water Resources Simulation <i>D</i>	4		S	ECI 141 w/C- or better	
<b>ECI 153</b>	Deterministic Optimization & Design <i>L</i>	4		S	MAT 21C, 22A, programming course	
<b>ECI 155</b> ( <i>SS</i> )	Water Resources Engrg. Planning	4		S	ENG 106 or ECN 1A; ECI 114	

<b>Senior Design Experience (SDE) Requirement: (8 units required) courses must be taken consecutively &amp; must be in final year of study</b>						
<b>ECI 193A</b> ( <i>WE</i> )	ECI Senior Design <i>L</i>	4		W	ECI 140D & one of the following courses: ECI 140B, 140C, or 149; all w/C- or better; & graduating w/in 1 year	
<b>ECI 193B</b> ( <i>WE</i> )	ECI Senior Design <i>L</i>	4		S	ECI 193A – In Progress Grading for ECI 193A&B – final grades posted in Spring	

<b>UPPER DIVISION ENGLISH COMPOSITION requirement: satisfy by Exam (0 units) - or take ONE of the UWP courses listed below (4 units)</b>						
<b>English Composition Exam</b> (given 4 <sup>th</sup> Saturday of each quarter – no more than 2 chances to pass the exam – low pass rate in recent offerings)						
Exam details at: <a href="http://writing.ucdavis.edu/compexam">http://writing.ucdavis.edu/compexam</a>						
<b>UWP 101</b>	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)
<b>UWP 102E</b>	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)
<b>UWP 102G</b>	Writing in the Disciplines: <u>Environmental</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)
<b>UWP 104A</b>	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)
<b>UWP 104E</b>	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)
<b>UWP 104T</b>	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)		
Fall	Winter	Spring	Fall	Winter	Spring	Fall	Winter	Spring
ECI 100	4 URE	4 ECI 140D	4	4	4	Upper Div Comp	4 ECI 193A	4 ECI 193B
ECI 140A	4 ECI 140C	4 ECI 123	4	4	4	ECI 149	4 ECI 115	4 URE
ECI 140B	4 ENG 106	3 ECI 141&L	4	4	4	URE	4 ECI 144	4 SE
URE	4 ECI 114	4 URE	4	4	4	URE	4 URE	3
16	15	16	16	15	12	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 working on it.

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](mailto: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](#).

*The Environmental Engineering degree is NOT (YET) accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>. We are working on it.*

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

**‘ENVIRONMENTAL ENGINEERING FACULTY 2050-2021** Additional info: <http://cee.engr.ucdavis.edu/people/faculty-directory/>

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