

Bachelor of Science in Environmental Engineering (BSENV/ENVE)

University of Washington

Prerequisites & General Electives Coursework

Prerequisite Course Key

▷ **Application Requirements** - Transfer/Interest Changers must complete by time of application (April 5).

▷▷ **Enrollment Requirements** - Transfer/Interest Changers must complete prior to enrollment in major.

ENGRUD Students: Plan to complete all CEE prerequisite courses (application and enrollment requirements) before starting CEE Core Curriculum (Junior Year).

Mathematics (24-25 credits)

- ▷ Calculus w/ Analytic Geo. (Math 124/125/126) **15cr**
- ▷▷ Differential Equations (AMATH 351 or MATH 207) **3cr**
- Matrix/Linear Algebra (AMATH 352 or MATH 208) **3cr**
- Statistics (INDE 315, Q SCI 381, STAT 390 or STAT 290) **3-4cr**

Sciences (35 credits)

- ▷▷ Biology (BIOL 180) **5cr**
- ▷ General Chemistry 1 (CHEM 142) **5cr**
- ▷ General Chemistry 2 (CHEM 152) **5cr**
- ▷ Mechanics (PHYS 121) **5cr**
- ▷▷ Elect-Mag & Oscillation (PHYS 122) **5cr**
- Earth science elective **3-5cr**
(Choose from: ATMS 101 (5cr), ATMS 211 (5cr, SSc), ATMS 212 (5cr, SSc), ESRM 100 (5cr, SSc), ESRM 101 (5cr, SSc), ESRM 210 (5cr), ESS 106 (3cr, SSc), ESS 201 (3cr), ESS 211 (5cr), ESS 212 (5cr), NUTR 200 (4cr), OCEAN 102 (5cr, SSc), or OCEAN 200 (3cr))

Engineering Fundamentals (12 credits)

- ▷▷ Computer Programming **4cr**
(AMATH 301, CSE 121, 122, 123, 142 or 160)
- ▷ Statics (AA 210) **4cr**
- Thermodynamics (AA 260) **4cr**

Written Communication (12 credits)

- ▷ English Composition **5cr**
- [Additional Composition or Writing](#) **7cr**

Economics (4-5 credits) *CEE Topic Requirement* **4-5cr**

(INDE 250, ECON 200/201, or ESRM/ECON/ENVIR 235)

*ECON/ESRM/ENVIR courses may also be applied to SSc req.

Areas of Inquiry (24 credits)

- Arts & Humanities (A&H) **10cr**
- Social Sciences (SSc) **10cr**
- Additional A&H and/or SSc **4cr**

Diversity (5 credit minimum) **5cr**

One course from UW's approved DIV list. See MyPlan.

BSENV Major Coursework

The BSENV degree encompasses extensive coursework, labs, and project experiences centering on microbiology, chemistry, and sustainability. The degree includes particular focus on water and air quality, water/wastewater treatment, hydrology, and hydrodynamics. BSENV students gain a deep understanding of the interactions among natural and human systems to develop innovative solutions to address environmental challenges.

Core Curriculum (30 credits)

(See sample 4 year plan on second page for core curriculum sequencing.)

- Intro to Fluid Mechanics (CEE 347) **5cr**
- Hydrology & Env. Fluid Mechanics (CEE 348) **4cr**
- Case Studies in Env. Engineering (CEE 349) **3cr**
- Mass & Energy Balances in Env. Engr. (CEE 350) **4cr**
- Intro to Microbial Principles in Env. Engr. (CEE 352) **5cr**
- Intro to Chemical Principles in Env. Engr. (CEE 354) **5cr**
- Quant. & Concept.Tools for Sustainability (CEE 356) **4cr**

Capstone and Professional Practice (7 credits)

- Capstone Design Course **5cr**
 - CEE 444 or 445, taken SPR qtr of senior year
- Professional Practice (CEE 440) **2cr**
 - CEE 440 taken in junior year.

Technical Electives (TE) (15 credits)

- Technical Electives are CEE 400-level courses that provide students with in-depth knowledge and design experience.
- See [BSENV Technical Electives list](#) for details.

Engineering & Science Electives (E&S) (13 cr.)

- BSENV students are required to complete 13 credits of Engineering and Science Elective coursework. See the [BSENV E&S Elective list](#) for complete details.

General Electives

Additional credits to meet the 180 total required for the BSENV degree.

Academic Planning Notes:

- Areas of Inquiry courses can also count toward Diversity and Additional Writing. Use MyPlan filters to identify courses that satisfy multiple requirements.
- CEE Study Abroad opportunities are a great way to satisfy degree requirements.

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Sample 4-year Plan

Freshman Year					
AUT		WIN		SPR	
MATH 124	5	MATH 125	5	MATH 126	5
CHEM 142	5	CHEM 152	5	CHEM 162**	5
Engl. Comp.	5	A&H/SSc/DIV	5	PHYS 121	5
ENGR 101	2				
Total	17		15		15
Sophomore Year					
AUT		WIN		SPR	
AA 210	4	CEE 220**	4	AA 260	4
PHYS 122	5	PHYS 123**	5	BIOL 180	5
ECON 200	5	AMATH 351	3	AMATH 352	3
		AMATH 301	4	A&H/SSc	3
Total	14		16		15
Junior Year					
AUT		WIN		SPR	
CEE 349	3	CEE 347	5	CEE 348	4
CEE 350	4	CEE 354	5	CEE 356	4
CEE 352	5	CEE 440	2	Earth Science	5
A&H/SSc/W	3	A&H/SSc	3		
Total	15		15		13
Senior Year					
AUT		WIN		SPR	
Technical Elective	3	Technical Elective	3	Capstone	5
Technical Elective	3	E&S Elective	4	Technical Elective	3
Technical Elective	3	Statistics	3-4	A&H/SSc/W	5
E&S Elective	4		+		+
Additional credits as desired or needed to reach 180.					
** Note: Though CHEM 162, PHYS 123, and CEE 220 are no longer required, interested ENV E students are still strongly encouraged to complete the classes if they align with future goals. CHEM 162, PHYS 123, and CEE 220 will all count as E&S electives.					

BSENV ADMISSIONS:

The BSENV program admits students once a year for autumn quarter only. See the [CEE website for detailed application information](#). Transfer students must also submit a UW admissions application for autumn. See [UW Admissions](#) for more information. Transfer students seeking course substitutions should be prepared to present a course description and syllabus. WA State Community College Transfers should consult the [UW Equivalency Guide](#).

BSENV TECHNICAL ELECTIVES: COURSE LIST

Select courses from any of the following. If you have taken (or would like to take) a CEE 4XX course that is not on the list below (including CEE 498 Special Topics or Study Abroad), please speak to an advisor about your options. *Thematic areas are shown to help guide selection.*

Engineered Systems and Processes

CEE 482 Wastewater Reuse & Resource Recovery (3)
 CEE 483 Drinking Water Treatment (3)
 CEE 490 Air-Pollution Control (4)
 CEE 498 Stormwater Management & Treatment (3)

Natural Systems and Processes

CEE 432 Advanced Remote Sensing & Earth Observation (4)
 CEE 437 Advanced Surveying (5)
 CEE 462 Applied Limnology and Pollutant Effects (3)
 CEE 463 Applied Limnology Lab (2)
 CEE 465 Data Analysis in Water Sciences (3)
 CEE 467 Geospatial Data Analysis (5)
 CEE 480 Air-Quality Modeling (3)
 CEE 498 Antimicrobial Resistance Impact on the Env. & Public Health (3)

Hydrology & Hydrodynamics

CEE 473 Coastal Engineering (3)
 CEE 474 Hydraulics of Sediment Transport (3)
 CEE 475 Analysis Techniques for Groundwater Flow (3)
 CEE 476 Physical Hydrology (3)
 CEE 477 Open-Channel Engr (3)
 CEE 478 Water Systems Management & Operations (3)
 CEE 481 Hydraulic Design for Environmental Engineering (3)

General Topics

CEE 401 Pavement Design for Roads (1)
 CEE 402 Energy Infrastructure (1)
 CEE 415 Machine Learning for Civil Engineers (4)
 CEE 424 GIS for Civil Engineers (3)
 CEE 450 Behavioral Science for Engineering Designers (DIV) (3)

Study Abroad

CEE 497 Engineering Jordan (*Study Abroad*) (5)
 CEE 498/499 [Grand Challenges Impact Lab](#)