

# 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) by start of 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 or STAT 390) **3-4cr**

### Sciences (35 credits)

- ▷▷ Biology (BIOL 180) **5cr**
- ▷ General Chemistry 1 (CHEM 142) **5cr**
- ▷ General Chemistry 2 (CHEM 152) **5cr**
- ▷▷ General Chemistry 3 (CHEM 162) **5cr**
- ▷ Mechanics (PHYS 121) **5cr**
- ▷ Elect-Mag & Oscillation (PHYS 122) **5cr**
- ▷▷ Waves (PHYS 123) **5cr**
- **Note: Students need to take 1 additional science course. See [BSENV E&S Elective list](#) for details.**

### Engineering Fundamentals (16 credits)

- ▷▷ Computer Programming **4cr**  
(AMATH 301, CSE 122, CSE 142 or CSE 160)
- ▷ Statics (AA 210) **4cr**
- ▷▷ Mechanics of Materials (CEE 220) **4cr**
- ▷▷ Thermodynamics (AA 260) **4cr**

### Written Communication (12 credits)

- ▷ English Composition **5cr**
- Technical Writing (ENGR 231) **3cr**
- [Additional Composition or Writing](#) **4cr**

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

- INDE 250 (4cr), ECON 200 or ECON 201 (5cr)
- ECON 200 or 201 will also satisfy I&S.

### [Areas of Inquiry \(24 credits\)](#)

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

### [Diversity \(3 credit minimum\)](#) **3cr**

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 444/445 taken SPR Qtr. of senior year.
- Professional Practice (CEE 440) **2cr**
  - CEE 440 taken SPR Qtr. of 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. **Included in these 12 credits, students must include an additional earth science course.** See the [BSENV E&S Elective list](#) for complete details.

### General Electives

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

#### Prerequisite Tips

- Areas of Inquiry courses can also count toward Diversity and Additional Writing. Use MyPlan filters to identify courses.
- 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/W	5	PHYS 121	5
ENGR 101	2	CEE 102	1	CEE 103	1
Total	17		16		16
Sophomore Year					
AUT		WIN		SPR	
AA 210	4	CEE 220	4	AA 260	4
PHYS 122	5	PHYS 123	5	BIOL 180	5
A&H/SSc/DIV	3	AMATH 351	3	AMATH 352	3
AMATH 301	4	A&H/SSc	3	A&H/SSc	3
Total	16		15		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	Additional Science	5	CEE 440	2
ENGR 231	3	Economics	+	TE/E&S/other	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/DIV	5
E&S Elective	4		+		+
Additional Credits as Desired of Needed					

#### 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 planning 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)

##### Natural Systems and Processes

CEE 432 Advanced Remote Sensing & Earth Observation (4)  
 CEE 462 Applied Limnology and Pollutant Effects (3)  
 CEE 465 Data Analysis in Water Sciences (Env or Hydrology) (3)  
 CEE 480 Air-Quality Modeling (3)  
 CEE 496 Fate and Transport of Chemicals in the Environment (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 481 Hydraulic Design for Environmental Engineering (3)

##### Sustainability

CEE 420 Engineering with Developing Communities (3)

##### Study Abroad

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