Bachelor of Science in Environmental Engineering (BSENVE/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**

(Chem must include stoichiometry, equilibrium, and kinetics. Transfer students may need to take the 3 course series to cover these topics.)

▷	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, ME 323, **or** PHYS 224)	**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.

BSENVE Major Coursework

The BSENVE degree encompasses extensive coursework, labs, and project experiences centered on microbiology, chemistry, and sustainability. Its particular focus is on water and air quality, water/wastewater treatment, hydrology, and hydrodynamics. BSENVE students gain a deep understanding of the interactions among natural and human systems and 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 BSENVE Technical Electives list for details.

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

- BSENVE students are required to complete 13 credits of Engineering and Science Elective coursework. See the BSENVE E&S Elective list for complete details.

General Electives

Additional credits to meet the 180 total required for the BSENVE 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	PHYS 121	5
Engl. Comp.	5	A&H/SSc/DIV	5	A&H/SSc	3
ENGR 101	2				
Total	17		15		15

Sophomore Year*

AUT		*WIN*		*SPR*	
AA 210	4	AMATH 351	3	AA 260	4
PHYS 122	5	AMATH 301	4	BIOL 180	5
ECON 200	5	A&H/SSc/W	5	AMATH 352	3
Total	14		12		12

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	A&H/SSc/W	5	Earth Science	5
CEE 440	2				
Total	14		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.

**Though CHEM 162, PHYS 123, and CEE 220 are no longer required, ENVE 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.*

*** Transfer students must ensure their chemistry series covers stoichiometry, equilibrium, and kinetics. It may be necessary to take the 3 course series depending on where these topics are covered.*

BSENVE ADMISSIONS:

The BSENVE 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.

BSENVE TECHNICAL ELECTIVES: COURSE LIST

Select courses from any of the following. This list is for AY 25-26 and may not include all TE options.

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 (4)
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)
CEE 498 Coastal Hazards (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)
CEE 498 Engineering, Environment & Justice (DIV) (3)
CEE 498 Engr. for Socioeconomic & Env. Justice (DIV) (2)

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