

Bachelor of Science in Civil Engineering (BSCE)

University of Washington

Prerequisites & General Elective 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.
- DTC Students:** Plan to complete all BSCE prerequisite courses (application and enrollment requirements) by start of CEE Core Curriculum (Junior Year).

Mathematics (24 credits)

- ▶ Calculus w/ Analytic Geo. (Math 124/125/126) **15cr**
- ▶ Differential Equations (MATH 307) **3cr**
- ▶▶ Matrix/Linear Algebra (MATH 308) **3cr**
- ▶ Statistics (INDE 315, STAT 390 or QSCI 381) **3-4cr**

Sciences (25+ credits)

- ▶ General Chemistry 1 (CHEM 142) **5cr**
- ▶ General Chemistry 2 (CHEM 152) **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 [BSCE UD E&S Elective list](#) for details).

Engineering Fundamentals (20 credits)

- ▶▶ Computer Programming (AMATH 301 or CSE 142) **4cr**
- ▶ Statics (AA 210) **4cr**
- ▶▶ Mechanics of Materials (CEE 220) **4cr**
- ▶▶ Dynamics & Kinematics (ME 230) **4cr**
- ▶ One Additional Engineering Fund. Course **4cr**
 - Choose from ME 123 (VLPA), MSE 170, EE 215, INDE 250, AA 260 or INDE 315.
 - If you complete statistics w/ INDE 315, you can apply an upper level MATH course toward this requirement. See your adviser for details.

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) or ECON 200 or 201 (5cr)
- INDE 250 will also satisfy your Add'l Engr. Fundamentals requirement; ECON 200 or 201 will also satisfy I&S.

Areas of Knowledge (24 credits)

- ▶ Visual, Literary & Performing Arts (VLPA) **10cr**
- ▶ Individuals & Societies (I&S) **10cr**
- ▶ Additional VLPA or I&S **4cr**

Diversity (3 credit minimum) **3cr**

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

BSCE Major Coursework

The BSCE degree covers six areas of interest: **Construction, Environmental, Hydrology, Geotechnical, Structural, and Transportation**. The 300-level CEE Core Curriculum provides a foundation in all areas. Technical Electives and Engineering & Science Electives, usually taken in the senior year, allow students to develop breadth in their preferred area(s) of interest. Seniors also complete a capstone design course in an area of their choice.

Core Curriculum (40 credits)

- ▶ Construction Engineering (CEE 307) **5cr**
- ▶ GeoSurveying (CEE 317) **5cr**
- ▶ Transportation Engineering (CEE 327) **5cr**
- ▶ Construction Materials (CEE 337) **5cr**
- ▶ Intro to Fluid Mechanics (CEE 347) **5cr**
- ▶ Environmental Engineering (CEE 357) **5cr**
- ▶ Geotechnical Engineering (CEE 367) **5cr**
- ▶ Intro to Structural Design (CEE 377) **5cr**

Capstone & Professional Practice (7 credits)

- ▶ Capstone Design Course **5cr**
 - CEE 441/442/444/445 taken SPR Qtr of senior year.
- ▶ Professional Practice (CEE 440) **2cr**
 - CEE 440 is taken SPR Qtr of junior year.

Technical Electives (TE) (15 credits, 3 areas)

- Technical Electives are CEE 400-level courses that provide students with in-depth knowledge and design experience.
- **Area Requirement:** Students are required to take at least one core course from 3 of the 6 areas. (See [BSCE TE list](#))

UD Engineering & Science Electives (12 credits)

- Choice of additional CEE 400-level courses or non-CEE courses from an approved list. **Must also include one science course from: BIOL 180, ATM S 211, ATM S 212, ESRM 210, ESS 201, ESS 210, ESS 211, ESS 212, or OCEAN 200/201.** (see [BSCE UD E&S Elective list](#) for details)

General Electives

Additional credits to meet the 180 total required for the BSCE.

Academic Planning Notes:

- Areas of Knowledge 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.
- AMATH 351/352 may be substituted for MATH 307/308.

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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	VLPA/I&S	5	VLPA/I&S	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	ME 230	4
PHYS 122	5	PHYS 123	5	AMATH 301	4
MATH 308	3	MATH 307	3	Additional Science	5
INDE 250/ECON	4	ENGR 231	3	VLPA/I&S	3
Total	16		15		16
Junior Year (Students Choose Track 1 or Track 2)					
AUT		WIN		SPR	
Jr. Track 1					
CEE 317	5	CEE 307	5	CEE 327	5
CEE 337	5	CEE 347	5	CEE 367	5
CEE 377	5	CEE 357	5	CEE 440	2
				TE/E&S/other	+
Total	15		15		12+
Jr. Track 2					
CEE 307	5	CEE 327	5	CEE 337	5
CEE 317	5	CEE 367	5	CEE 357	5
CEE 347	5	CEE 377	5	CEE 440	2
				TE/E&S/other	+
Total	15		15		12+
Senior Year					
AUT		WIN		SPR	
Technical Elective	3	Technical Elective	3	Capstone	5
Technical Elective	3	UD E&S Elective	4	Technical Elective	3
Technical Elective	3	INDE 315	3	Elective	4
UD E&S Elective	3		+		
Additional Credits as Desired of Needed					

BSCE ADMISSIONS:

The BSCE 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](#).

Technical Electives: Course List

This list is not exhaustive. If you have taken (or plan 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 adviser about your options. Students must take 3cr from 3 of 6 areas.

Construction, Energy & Sustainable Infrastructure

CEE 408 Sustainable Roadway Design and Construction (3)
 CEE 420 Engineering with Developing Communities (3) DIV
 CEE 424 GIS for Civil Engineers (3)
 CEE 429 Sustainability in Building Infrastructure (3)
 CEE 433 Design and Construction of Temporary Structures (3)
 CEE 434 Project Estimating (3)
 CEE 435 Project Scheduling (3)

Environmental Engineering

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 481 Hydraulic Design for Environmental Engineering (3)
 CEE 482 Wastewater Reuse & Resource Recovery (3)
 CEE 483 Drinking Water Treatment (3)
 CEE 490 Air-Pollution Control (4)
 CEE 496 Fate and Transport of Chemicals in the Env. (3)
 CEE 497 Engineering Jordan (*Study Abroad*) (5)

Geotechnical Engineering

CEE 436 Foundation Design (3)

Hydrology/Hydrodynamics (Water)

CEE 465 Data Analysis in Water Sciences (Hydrology or Env) (3)
 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 and Operations (3)

Structural Engineering

CEE 378 Structural Analysis (Formerly CEE 456) (5)
 CEE 451 Design of Metal Structures (3)
 CEE 452 Design Reinforced Concrete Structures (3)
 CEE 453 Prestressed Concrete Design (3)
 CEE 454 Design Timber Structures (3)
 CEE 455 Structural Unit Masonry (3)
 CEE 457 Advanced Structures I (3)

Transportation Engineering

CEE 410 Traffic Engr Fundamentals (3)
 CEE 412 Transportation Data Mgmt. (3)
 CEE 416 Urban Transportation Planning & Design (3)

Non Area-Specific Courses (Will not satisfy area requirement)

CEE 409 Engineering Rome (*Study Abroad*) (5)
 CEE 432 Advanced Remote Sensing & Earth Observation (4)

CEE Study Abroad Opportunities (India, Indonesia, etc.)