

# Bachelor of Science in Civil Engineering (BSCE/CIVE)

## 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.

**ENGRUD Students:** Plan to complete all BSCE prerequisite courses (application and enrollment requirements) by the start of CEE Core Curriculum (Junior Year).

#### Mathematics (24 credits)

- ▷ Calculus w/ Analytic Geo. (Math 124/125/126) **15cr**
- ▷ Differential Equations (MATH 207 or AMATH 351) **3cr**
- ▷▷ Matrix/Linear Algebra (MATH 208 or AMATH 352) **3cr**
- ▷ Statistics (INDE 315 or STAT 390 or STAT 290) **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 E&S Elective list](#) for details.**

#### Engineering Fundamentals (20 credits)

- ▷▷ Computer Programming **4cr**  
(AMATH 301, CSE 122, CSE142 or CSE160)
- ▷ 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 (A&H), MSE 170, EE 215, INDE 250, AA 260 or INDE 315.
  - If you complete statistics w/ INDE 315, you can apply MATH 209 or MATH 224 toward this requirement.

#### Written Communication (12 credits)

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

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

- ▷ INDE 250 (4cr), ECON 200 or ECON 201 (5cr)
- INDE 250 will also satisfy your Addtl Engr. Fundamentals requirement; ECON 200 or 201 will also satisfy SSc.

#### Areas of Inquiry (24 credits)

- ▷ Arts and 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.

### 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, typically taken in the senior year, allow students to develop depth in their preferred area(s) of interest. Seniors also complete a capstone design course in an area of their choice.

#### Core Curriculum (40 credits)

(See sample 4 year plan on page 2 for core curriculum sequencing (Track 1 and Track 2))

Construction Engineering (CEE 307)	<b>5cr</b>
GeoSurveying (CEE 317)	<b>5cr</b>
Transportation Engineering (CEE 327)	<b>5cr</b>
Construction Materials (CEE 337)	<b>5cr</b>
Intro to Fluid Mechanics (CEE 347)	<b>5cr</b>
Environmental Engineering (CEE 357)	<b>5cr</b>
Geotechnical Engineering (CEE 367)	<b>5cr</b>
Intro to Structural Design (CEE 377)	<b>5cr</b>

#### Capstone & Professional Practice (7 credits)

Capstone Design Course	<b>5cr</b>
• CEE 441/442/444/445 taken SPR Qtr of senior year.	
Professional Practice (CEE 440)	<b>2cr</b>
• 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 3 credits from 3 of the 6 areas. (See [BSCE TE list](#) for details)

#### Engineering & Science Electives (E&S) (12 cr.)

BSCE students are required to complete 12 credits of Engineering and Science Elective coursework. **Included in these 12 credits, students must include a basic science course.** See the [BSCE E&S Elective list](#) for complete details.

#### General Electives

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

#### 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/W	5
ENGR 101	2				
Total	17		15		15
Sophomore Year					
AUT		WIN		SPR	
AA 210	4	CEE 220	4	ME 230	4
PHYS 122	5	PHYS 123	5	AMATH 301	4
MATH 208	3	MATH 207	3	Additional Science	5
INDE 250/ECON	4	Writing	3	A&H/SSc	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 337	5
CEE 327	5	CEE 347	5	CEE 367	5
CEE 357	5	CEE 377	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	E&S Elective	4	Technical Elective	3
Technical Elective	3	INDE 315	3	Elective	4
E&S Elective	3		+		
Additional credits as desired or needed to reach 180.					

### 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](#).

### BSCE TECHNICAL ELECTIVES: COURSE LIST

Students must take 3cr from 3 of 6 areas. Courses with an \* are listed in multiple areas but will only satisfy one TE area req.

#### Construction, Energy & Sustainable Infrastructure

CEE 424 GIS for Civil Engineers (3)  
 CEE 433\* Design and Construction of Temporary Structures (3)  
 CEE 434 Project Estimating (3)  
 CEE 435 Project Scheduling (3)  
 CEE 454\* Design of Timber Structures (3)

#### Environmental Engineering

CEE 462 Applied Limnology and Pollutant Effects (3)  
 CEE 465\* Data Analysis in Water Sciences (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 497 Engineering Jordan (*Study Abroad*) (5)

#### Geotechnical Engineering

CEE 436 Foundation Design (3)

#### Hydrology/Hydrodynamics (Water)

CEE 465\* Data Analysis in Water Sciences (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)  
 CEE 480\* Air-Quality Modeling (3)  
 CEE 481\* Hydraulic Design for Environmental Engineering (3)

#### Structural Engineering

CEE 378 Structural Analysis (Formerly CEE 456) (5)  
 CEE 433\* Design and Construction of Temporary Structures (3)  
 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)

#### 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.)**

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