

# CIVIL ENGINEERING MAJOR (B.S)

<http://ceps.unh.edu/cee/civil-engineering-bs>

## Description

Matriculating students should have strong aptitudes in mathematics and science along with imagination, spatial and graphic abilities, communication skills, and creativity. Students then follow a four-year program that conforms to the guidelines of, and is accredited by, the:

Engineering Accreditation Commission of ABET  
111 Market Place  
Suite 1050  
Baltimore, MD 21202-4012  
(410) 347-7700.

The first two years of the program provide the necessary technical knowledge in mathematics, chemistry, and physics, while introducing and developing problem-solving techniques in eight courses tailored to civil engineering students. The junior year provides courses in each of the civil engineering sub-disciplines, providing students with skills in each and allowing students to determine which they wish to pursue further. The senior year is flexible, allowing students to choose where to focus attention by selecting from more than forty elective courses in civil and environmental engineering.

The required curriculum includes seven writing-intensive courses, thereby not only satisfying but exceeding the University's writing requirement. (See University Academic Requirements.)

## Requirements

### Electives

More than half of the major's total credits and nearly all of the senior-level courses are elected by the student. Of these, there are Discovery Program electives required by the University and other electives required by the department in order to satisfy departmental objectives and accreditation requirements.

The Discovery Program is described in University Academic Requirements. Courses required by the BSCIVE program fulfill Discovery requirements in:

CEE 400	Introduction to Civil Engineering	4
ENGL 401	First-Year Writing (Writing Skills)	4
MATH 425	Calculus I (Quantitative Reasoning)	4
PHYS 407	General Physics I (Physical Sciences and Discovery Lab)	4
CEE 797 & CEE 798	Introduction to Project Planning and Design and Project Planning and Design	4

Therefore, students select electives to satisfy Discovery requirements in Humanities, Biological Science, Fine and Performing Arts, Historical Perspectives, Social Science, and World Cultures. The Discovery Social Science elective must be one of the following courses: CEP 415, CSL 401, ECON 401, ECON 402, ECON 444, EREC 411, GEOG 582, GEOG 584,

or POLT 402. Students must take an AutoCAD Elective (TECH 564 or CT 427), a Spatial Metrics Elective (CEE 404, CT 446, NR 658, FORT 581, or both CT 423 and CT 425), a Technical Writing Elective (ENGL 502 or ENGL 602), and a Statistics Elective (MATH 539 or MATH 644). In the senior year, students take seven 700-level electives subject to the following restrictions: courses must be taken in four of six different concentration areas (environmental engineering, geotechnical engineering, civil engineering materials, structural engineering, sustainability, and water resources) and at least three design courses must be taken at least one of which must be designated as a project-based design elective. One of the seven 700-level courses is a senior technical elective, which can be any CEPS 700-level course of 3 credits or more including CEE courses, GEOG 757, and TECH 750. Lists of courses that fulfill the 700-level course electives are available from the Department.

## Additional Program Policies and Requirements

To transfer into the BSCE major, a student must satisfy the following:

1. Be a CEPS major or have at least 12 credits of graded work at UNH along with Calculus I, and either chemistry or calculus-based physics.
2. Have an overall UNH grade-point average of 2.33 or greater.
3. Have an overall grade-point average of 2.33 or greater in all CEE courses taken to date;
4. Have a grade-point average of 2.33 or greater in courses taken to date at UNH of MATH 425, PHYS 407, CHEM 403 or CHEM 405, CEE 500, and CEE 501.
5. Have a grade-point average of 2.33 or greater in courses taken to date of CEE 500 and CEE 501.

At the time of transferring into the BSCIVE program, only CEE 600-level and CEE 700-level classes with a grade of C- or better may be transferred in.

BSCE majors wishing to participate in domestic or international exchange programs must achieve a cumulative grade-point average of 2.50 or better in all CEE courses taken to date at the time of application to the exchange program.

To begin taking the required CEE 600-level courses in the junior year, students must meet the following requirements:

1. MATH 425, PHYS 407, CHEM 403 or CHEM 405, CEE 500, and CEE 501 must have been completed with passing grades.
2. The student must have a grade-point average of 2.00 or greater in all CEE courses.
3. The student must have a grade-point average of 2.00 or greater in MATH 425, PHYS 407, CHEM 403 or CHEM 405, CEE 500, and CEE 501.
4. The student must have a grade-point average of 2.00 or greater in CEE 500 and CEE 501.

To graduate with a bachelor of science in civil engineering, a student must achieve the following: 129 or more credits, credit for the civil engineering program's major and elective courses, satisfaction of the University's Discovery Program requirements, satisfaction of the University's writing-intensive course requirements, a cumulative grade-point average of 2.0 or better for all courses, a cumulative grade-point average of 2.0 or better in all CEE courses.

Degree Plan		
Course	Title	Credits
<b>First Year</b>		
<b>Fall</b>		
CEE 400	Introduction to Civil Engineering	4
ENGL 401	First-Year Writing	4
	Elective AutoCAD	3
	Elective Discovery Program Requirement <sup>1</sup>	4
	Credits	15
<b>Spring</b>		
	Elective Spatial Metrics	4
MATH 425	Calculus I	4
PHYS 407	General Physics I	4
	Elective Discovery Program requirement <sup>1</sup>	4
	Credits	16
<b>Second Year</b>		
<b>Fall</b>		
CEE 500	Statics for Civil Engineers	3
	Elective Technical Writing	4
CEE 520	Environmental Pollution and Protection: A Global Context	4
MATH 426	Calculus II	4
PHYS 408	General Physics II	4
	Credits	19
<b>Spring</b>		
CEE 501	Strength of Materials	3
CEE 502	Project Engineering	3
CHEM 405	Chemical Principles for Engineers	4
MATH 527	Differential Equations with Linear Algebra	4
	Elective Discovery Program requirement	4
	Credits	18
<b>Third Year</b>		
<b>Fall</b>		
CEE 635	Engineering Materials	4
CEE 650	Fluid Mechanics	4
CEE 680	Classical Structural Analysis	3
	Elective Discovery Program requirement <sup>1</sup>	4
	Credits	15
<b>Spring</b>		
CEE 665	Soil Mechanics	4
CEE 620	Fundamental Aspects of Environmental Engineering	4
	Elective Statistics	4
	Elective Discovery Program requirement <sup>1</sup>	4
	Credits	16
<b>Fourth Year</b>		
<b>Fall</b>		
CEE 797	Introduction to Project Planning and Design	1
	Elective Project-Based Design Elective <sup>3</sup>	4
	Elective Area Elective 2 <sup>3</sup>	3
	Elective Civil Engineering <sup>3</sup>	3

Elective Discovery Program requirement <sup>1</sup>	4	
Credits	15	
<b>Spring</b>		
CEE 798	Project Planning and Design	3
	Elective Area Elective 3 <sup>3</sup>	3
	Elective Area Elective 4 <sup>3</sup>	3
	Elective Civil Engineering	3
	Elective Senior Technical Elective <sup>3</sup>	3
Credits	15	
Total Credits	129	

<sup>1</sup> A course satisfying one each of the Discovery Program categories of Humanities, Biological Science, Fine and Performing Arts, Historical Perspectives, Social Science and World Cultures.

<sup>2</sup> Satisfies capstone requirement for Discovery.

<sup>3</sup> Approved list available in the CEE office.