

# CIVIL ENGINEERING (BSE)

## Bachelor of Science in Engineering

The Civil Engineering major requires a total of 128 credits. Civil Engineering majors are required to complete the following:

| Course  | Title  | Credits        |
|---|--|----------------|
| CE 2110   | Applied Mechanics I  | 3              |
| CE 2211   | Engineering Economics I  | 1              |
| CE 2251   | Probability and Statistics in Civil and Environmental Engineering              | 3              |
| CE/ENVE 2411  | Introduction to Computer Aided Design  | 1              |
| CE 2710   | Transportation Engineering and Planning  | 3              |
| CE 3110   | Mechanics of Materials   | 3              |
| CE 3220   | Principles of Construction I   | 3              |
| CE 3510   | Soil Mechanics   | 3              |
| CE 3520<br>or ENVE 3200                                 | Civil Engineering Materials Laboratory<br>Environmental Engineering Laboratory | 3              |
| CE 3610   | Introduction to Structural Analysis and Design                                 | 3              |
| CE 4900W<br>or CE 4910W                                 | Civil Engineering Projects I   | 2-3            |
| CE 4920W  | Civil Engineering Projects II  | 2              |
| ENVE 2310E  | Environmental Engineering Fundamentals   | 3              |
| ENVE 3120   | Fluid Mechanics  | 4              |
| CHEM 1128Q<br>or CHEM 1148Q                             | General Chemistry II<br>Honors General Chemistry II                            | 4              |
| ENGR 1166   | Foundations of Engineering   | 3              |
| MATH 2110Q<br>& MATH 2410Q                              | Multivariable Calculus<br>and Elementary Differential Equations                | 7              |
| Professional Requirements (p. 1) courses                |  | 21             |
| Science Elective (p. 1) (minimum of three credits)      |  | 3              |
| Elective courses (as needed to reach 128 credits total) |  | 53             |
| <b>Total Credits</b>                                    |  | <b>128-129</b> |

## Science Elective

The science elective may be satisfied by:

| Course     | Title                                 | Credits |
|------------|---------------------------------------|---------|
| BIOL 1107  | Principles of Biology I               | 4       |
| CHEM 2241  | Organic Chemistry                     | 3       |
| CHEM 2443  | Organic Chemistry                     | 3       |
| EEB 2208E  | Introduction to Conservation Biology  | 3       |
| ERTH 1050  | Earth's Dynamic Environment           | 4       |
| ERTH 1051  | Earth's Dynamic Environment (Lecture) | 3       |
| GEOG 1300E | Climate, Weather, and the Environment | 3       |
| GEOG 1302  | GIS Modeling of Environmental Change  | 4       |
| GEOG 2300E | Introduction to Physical Geography    | 3       |
| MARN 1002E | Introduction to Oceanography          | 3       |
| NRE 1000E  | Environmental Science                 | 3       |
| NRE 1235E  | Environmental Conservation            | 3       |
| NRE 2215E  | Introduction to Water Resources       | 3       |

|          |                                   |   |
|----------|-----------------------------------|---|
| NRE 3105 | Wetlands Biology and Conservation | 3 |
| NRE 3145 | Meteorology                       | 3 |

Other courses in areas complementary to Civil Engineering, such as biology, ecology, geology, or natural resources, may also be approved.

## Professional Requirements

The professional requirements are satisfied by 21 credits of 2000-level or higher courses in engineering, science, mathematics, or statistics, including AH 3275 HAZWOPER; MENT 5335 Venture Planning, Management, and Growth; OPIM 3603 Project Management and Planning/BADM 3603 Project Management and Planning; or up to three credits of ART 3670. No more than one science course at the 2000-level may be used. Any number of engineering, mathematics or statistics courses at the 2000-level may be used. At least one course each from four of the following different technical areas must be selected:

| Course   | Title  | Credits |
|--|--|---------|
| <b>Construction Engineering and Management</b> |  |         |
| CE 4210  | Operations Research in Civil and Environmental Engineering | 3       |
| CE 4220  | Principles of Construction II                              | 3       |
| <b>Environmental Engineering</b>               |  |         |
| ENVE 3220                                      | Water Quality Engineering                                  | 3       |
| ENVE 4310                                      | Environmental Modeling                                     | 3       |
| <b>Geotechnical Engineering</b>                |  |         |
| CE 4510  | Foundation Design  | 3       |
| CE 4530  |  | 3       |
| CE 4541  | Advanced Soil Mechanics                                    | 3       |
| CE 4560  | Coastal Hazard Engineering                                 | 3       |
| ENVE 4540                                      | Design of Groundwater Systems                              | 3       |
| <b>Structural Engineering</b>                  |  |         |
| CE 3630  | Design of Steel Structures                                 | 4       |
| CE 3640  | Design of Reinforced Concrete Structures                   | 4       |
| <b>Geodetic/Site Engineering</b>               |  |         |
| CE 2500  | Introduction to Geographic Information Systems             | 4       |
| CE 4410  | Computer Aided Site Design                                 | 3       |
| <b>Transportation Engineering</b>              |  |         |
| CE 4710  | Case Studies in Transportation Engineering                 | 3       |
| CE 4720  | Street and Highway Design                                  | 3       |
| CE 4730  | Transportation Planning                                    | 3       |
| CE 4740  | Traffic Engineering I                                      | 3       |
| CE 4750  | Pavement Design  | 3       |
| <b>Water Resources Engineering</b>             |  |         |
| ENVE 4810                                      | Engineering Hydrology                                      | 3       |
| ENVE 4820                                      | Hydraulic Engineering                                      | 3       |

No course that was used to meet another requirement for the Civil Engineering program may double count as a Professional Requirement. This includes university general education requirements and requirements for the College of Engineering or the Civil Engineering Program, for example, the science elective. Courses taken from the above list but not used to fulfill the four technical area requirements may be used to satisfy remaining professional requirements.

## Additional Notes

The Civil Engineering undergraduate program educational objectives are to prepare our alumni/ae with the knowledge and skills needed to:

- Actively contribute to the practice and profession of engineering, including management and administration, in the public, private or academic sectors in the technical areas of construction, environmental, geotechnical, structural, transportation, and water resources engineering;
- Follow a path towards leadership in the profession that can include licensure as professional engineers who design and construct solutions to civil engineering problems in the natural and built environments; and
- Practice life-long learning through post-graduate and professional education.

The Civil Engineering program is accredited by the Engineering Accreditation Commission of ABET, [www.abet.org](http://www.abet.org) (<http://www.abet.org>).

## University General Education Requirements

Every student must meet a set of core requirements to earn a baccalaureate degree, in addition to those required by the student's major course of study and other requirements set by the student's school or college. For more information about these requirements, please see General Education Requirements (<https://catalog.uconn.edu/undergraduate/gen-ed-requirements/>).

## College of Engineering Degree Requirements

Students must meet a set of requirements established by the college in addition to the University's General Education requirements. For more information, see the College of Engineering (<https://catalog.uconn.edu/undergraduate/engineering/#requirementstext>) section of this catalog.