CIVIL ENGINEERING
UNDERGRADUATE MAJOR
(BA, BS, HBA, HBS)

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The Bachelor of Science degree in Civil Engineering is accredited by the

Civil engineering is a diverse professional field with discipline specialties
in structures, transportation, water supply and water pollution control,
geotechnical engineering, hydrology, hydraulics and water resources,
geomatics, ocean engineering, construction, and engineering planning
and economics. All CE students receive basic instruction in the various
disciplines, with the option for additional elective courses in desired
areas. The program is supported by highly qualified faculty and staff that
maintain the programs and facilities at the highest level of quality.

The civil engineering curriculum within the School of Civil and
Construction Engineering (CCE) includes the basic sciences, social
sciences, humanities, communication skills, engineering sciences, and
engineering design in order to teach students an integrated approach to
practical solutions.

The mission of the civil engineering program is to provide a
comprehensive, state-of-the-art education to prepare students for
professional and responsible engineering positions with business,
industry, consulting firms or government.

Program Educational Objectives—Civil
Engineering

Note: The Bachelor of Science degree in Civil Engineering is accredited
by the Engineering Accreditation Commission of ABET (http://
www.abet.org), which requires stated program educational objectives and
student outcomes to support these.

OSU Civil Engineering graduates receive a compelling education, and
within 3 to 5 years of graduation will have:

1. Assembled, analyzed and synthesized/evaluated information to solve
   engineering problems and perform modern civil engineering design
   by applying mathematics, engineering sciences and fundamentals of
civil engineering.
2. Participated in modern professional practice or a graduate program
   in a specialty area of civil engineering, demonstrating effective
   communication, collaborative work and leadership in diverse teams,
ethical decision-making, successful management of personal and
professional career objectives, and continual development through
lifelong learning and professional involvement.
3. Recognized the importance of professional licensure and have
   achieved or prepared to achieve this significant accomplishment. In
this endeavor, consideration of the public health, welfare and safety is
seen as the paramount priority.

4. Applied an understanding of public policy and contemporary
   societal issues with sensitivity to the challenge of meeting social,
environmental, and economic constraints within a global community.

Student Outcomes for Civil Engineering
Programs

The OSU Civil Engineering program prepares its graduates to achieve the
Program Educational Objectives above several years into their careers.
This is achieved by having students able to perform the following on
graduation, well preparing them for active immediate and lifelong service
in the profession:

1. Ability to apply knowledge of mathematics, science, and engineering
to solve engineering problems
2. Ability to design and conduct experiments as well as analyze and
   interpret data
3. Ability to design a system, component, or process to meet desired
   needs within realistic constraints such as economic, social, political,
   ethical, health and safety, manufacturability and sustainability
4. Ability to function on multi-disciplinary teams
5. Ability to identify, formulate, and solve engineering problems
6. Understanding of professional and ethical responsibility
7. Ability to communicate effectively
8. Broad education necessary to understand impact of engineering
   solutions in global, economic, environmental and societal context
9. Recognition of need for and ability to engage in lifelong learning
10. Knowledge of contemporary issues
11. Ability to use techniques, skills, and modern engineering tools
    necessary for engineering practice
12. Knowledge of basic concepts in leadership
13. Ability to include non-engineering considerations, including business,
    regulatory and safety issues in problem-solving
14. Ability to incorporate effective negotiation or consensus-gaining in
    group decision-making
15. Knowledge and application of project planning and management
    practices and tools
16. Ability to assess imperfect or incomplete data conditions, risks and
    alternatives into problem-solving decisions
17. Exposure to current industry design practices, construction methods
    and materials, and overall project delivery considerations

Design is the essence of civil engineering. Junior and senior level courses
include extensive design content, culminating in a team approach to the
solution of open-ended, realistic problems, including capstone design
and professional practice courses. Courses with design content include
those with "design" in their titles. A more detailed explanation of the
design experience and design course sequences is contained in the
"Civil Engineering Advising Guide," which may be viewed on the school’s
website at http://cce.oregonstate.edu/academic-advising.

A student may also earn a concurrent Bachelor of Arts (BA) or Honors
Bachelor of Arts (HBA) degree by completing 32 additional credits in
residence including language proficiency equivalent to that attained
at the end of the second year of a foreign language as certified by
the School of Language, Culture, and Society. Neither the BA nor
the HBA degree in civil engineering is accredited by the Engineering
Commission of ABET.
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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CCE 321</td>
<td>CIVIL AND CONSTRUCTION ENGINEERING MATERIALS</td>
<td>4</td>
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<tr>
<td>CE 301</td>
<td>CE JUNIOR SEMINAR</td>
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<td>CE 311</td>
<td>FLUID MECHANICS</td>
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<td>CE 313</td>
<td>HYDRAULIC ENGINEERING</td>
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<td>CE 361</td>
<td>SURVEYING THEORY</td>
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<td>CE 372</td>
<td>GEOTECHNICAL ENGINEERING I</td>
<td>4</td>
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<td>CE 373</td>
<td>GEOTECHNICAL ENGINEERING II</td>
<td>4</td>
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<td>CE 381</td>
<td>STRUCTURAL THEORY I and STRUCTURAL THEORY II</td>
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<td>CE 392</td>
<td>INTRODUCTION TO HIGHWAY ENGINEERING</td>
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<td>CE 412</td>
<td>HYDROLOGY</td>
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<td>CE 481</td>
<td>REINFORCED CONCRETE I</td>
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<td>ENVE 321</td>
<td>ENVIRONMENTAL ENGINEERING FUNDAMENTALS</td>
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<tr>
<td>CE 361</td>
<td>SURVEYING THEORY</td>
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Select 12 credits of the following:

- CE 361/CE 561 PHOTOGRAMMETRY
- CE 461/CE 563 CONTROL SURVEYING
- CE 465/CE 565 OREGON LAND SURVEY LAW
- CE 469 PROPERTY SURVEYS
- CE 569 PROPERTY SURVEYS
- CE 562 DIGITAL TERRAIN MODELING

Total Hours: 16

Major Code: 306