Civil engineering

Did You Know?

The CEAE department is home to state-of-the-art laboratories that allow for testing related to earthquakes, water quality, soil behavior, environmental transport, and more.

Students in department:
CVEN: 256 undergraduates
CVEN: 178 grad students
AREN: 277 undergraduates

Faculty:
38 faculty in the CEAE department

Research:
3 interdisciplinary research centers
$4.2 million in research awards (2006-07)

Rankings:
CU-Boulder is the only doctoral university in the Rocky Mountain region ranked in the top 20 public engineering programs in the nation.
The graduate program in civil engineering is ranked 16th among public universities (USNWR).

Colorado
University of Colorado at Boulder

Civil engineers design and build facilities that improve our standard of living and quality of life. They are problem solvers meeting the challenges of pollution, drinking water, climate change, energy and transportation needs, urban development and community planning for the megacities of the 21st century. Civil engineers are at the forefront of technology and are rebuilding the nation's infrastructure, mitigating earthquakes, cleaning up hazardous wastes polluting our environment, and ensuring sustainable water and energy supply. Their projects range from bridges, highways, dams, and airports to large off-shore structures, aircraft and space vehicles.

The University of Colorado at Boulder's civil engineering undergraduate program emphasizes open-ended problems, computer applications, and undergraduate research. The program is characterized by a high degree of faculty-student interactions, both inside and outside the classroom.

"The hands-on projects I've done in my classes have let me work with faculty and industry professionals, and they have helped me tremendously in preparing for my internships."

— Jesse Lyman

Hands-on Learning

At CU, students learn by doing. In the department of Civil, Environmental, and Architectural Engineering, Many students participate in service-learning opportunities, including working on international engineering projects through the Engineering for Developing Communities program and non-profit organization Engineers WIthout Borders-USA.

Engineers Without Borders-USA was founded by CU civil engineering professor Bernard Amadei to partner with developing communities and improve their quality of life. EWB now has 14,000 members working on some 250 projects in 48 countries worldwide.

A degree in civil engineering prepares students for careers in:

- Construction industry
- Structural and geotechnical design
- Water resources planning
- Pollution prevention and water treatment

Employment opportunities abound in private firms; federal, state, and local government; international agencies and corporations

Civil curriculum

128 semester credit hours required

(Sample Curriculum)

FRESHMAN YEAR	
Fall Semester	16
APPM 1350 Calculus 1 for Engineers	4
CHEN 1211 Engr General Chemistry	3
CHEM 1221 Engr General Chemistry Lab	2
CVEN 1317 Intro to Civil Engineering	1
Humanities/Social Science Elective	3
Basic Engineering Elec/GEEN 1400	3
Spring Semester	16
APPM 1360 Calculus 2 for Engineers	4
PHYS 1110 General Physics 1	4
CVEN 2012 Intro to Geomatics	3
Humanities/Social Science Elective	3
AREN 1017 Engineering Drawing	2

SOPHOMORE YEAR	
Fall Semester	18
APPM 2350 Calculus 3 for Engineers	4
PHYS 1120 General Physics 2	4
PHYS 1140 Experimental Physics	1
CVEN 2121 Analytical Mechanics 1	3
AREN 2110 Thermodynamics	3
Humanities/Social Science Elective	3
Spring Semester	16
APPM 2360 Diff Eq with Linear Algebra	4
CVEN 3313 Theoretical Fluid Mechanics	3
CVEN 3161 Mechanics of Materials 1	3
GEEN 1300 Intro to Engineering Computing	3
CVEN 3698 Engineering Geology	3

JUNIOR YEAR	
Fall Semester	15
CVEN 3246 Intro to Construction	3
CVEN 3323 Hydraulic Engineering	3
CVEN 3414 Fund. of Env. Engineering	3
CVEN 3525 Structural Analysis	3
CVEN 3708 Geotechnical Engr 1	3
Spring Semester	15
CVEN 3227 Probability, Stats, Decision	3
CVEN Proficiency I	3
CVEN Proficiency II	3
CVEN 3111 Analytical Mechanics II	3
WRTG 3030 Writing on Science & Society	3

SENIOR YEAR	
Fall Semester	15
CVEN Proficiency III	3
CVEN 3602 Transportation	3
CVEN Concentration I	3
CVEN Proficiency IV	3
Humanities & Social Science Elective	3
Spring Semester	17
CVEN Concentration II	3
Technical Elective	3
Technical Elective	4
CVEN Senior Design	4
Upper Div. Humanities/Social Science Elective	3

For more information visit http://civil.colorado.edu

Areas of concentration within civil engineering

Structural engineering and mechanics

Construction engineering and management

Environmental engineering

Geotechnical engineering

Water resources engineering and management

Additional tracks

Engineering for developing communities

Engineering science

Engineering Co-op

The Engineering Co-op program allows students to participate in paid professional work experiences while earning course credit.

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