

Architectural engineering



Did You Know?

CU-Boulder is a two-time first place winner of the international Solar Decathlon competition, which challenges students to design and build an energy-efficient solar-powered home and operate it for eight days on the National Mall in Washington D.C.

Students in department:

AREN: 277 undergraduates
CVEN: 256 undergraduates
CVEN: 178 grad students

Faculty:

38 faculty in the CEAE Department

Research:

The department received \$4.2 million in sponsored research awards in 2006-07, including research in civil, environmental, and architectural engineering.

Rankings:

CU-Boulder is the only doctoral university in the Rocky Mountain region ranked in the top 20 public engineering programs in the nation (USNWR).

Colorado
University of Colorado at Boulder

The undergraduate program in architectural engineering prepares students to design and build facilities that improve our standard of living and quality of life. They are problem solvers meeting the challenges of energy needs, building systems, urban development, and community planning. Architectural engineers are leading users of sophisticated high-tech products, applying the very latest computer-aided design and analysis techniques, nondestructive testing and measurement, and sensing devices during design, construction, and operation of built facilities.

Through the Department of Civil, Environmental, and Architectural Engineering, CU prepares students for professional practice or graduate study in the following sub-disciplines: structural engineering, illumination engineering, construction engineering, heating, ventilating and air conditioning engineering, and solar heating and cooling.

“In my classes we use the structural and architectural plans of the Integrated Teaching and Learning Laboratory to learn about the different types of systems. It helps to be able to actually see how the plans look in real life.”

— Amber Shoals



Hands-on Learning

CU architectural engineering students learn their trade through hands-on work starting in their very first year. Hands-on design projects courses, extra-curricular opportunities such as the Solar Decathlon team, and exciting co-op and internship experiences prepare our students with the technical, professional, and team skills that make them competitive for jobs after graduation.

What can I do with a degree in architectural engineering?

- Construction Management Engineer
- Structural Engineer
- Building Mechanical Systems Engineer
- Building Electrical Systems Engineer



Architectural curriculum

128 semester credit hours required

(Sample Curriculum)

FRESHMAN YEAR

Fall Semester

APPM 1350 Calculus 1 for Engineers	4
CHEN 1211 Engr General Chemistry	3
CHEM 1221 Engr General Chemistry Lab	2
AREN 1316 Intro to Architectural Engr	1
AREN 1017 Engineering Drawing	2
Humanities and Social Science Elective	3

Spring Semester

APPM 1360 Calculus 2 for Engrs	4
PHYS 1110 General Physics 1	4
CVEN 2012 Intro to Geomatics	3
AREN 1027 Descriptive Geometry	2
Humanities and Social Science Elective	3

SOPHOMORE YEAR

Fall Semester

APPM 2350 Calculus 3 for Engrs	4
PHYS 1120 General Physics 2	4
CVEN 2121 Analytical Mechanics 1	3
AREN 2110 Thermodynamics	3
AREN 2050 Environ Sys for Buildings	3

Spring Semester

APPM 2630 Diff Eq with Linear Algebra	4
AREN 3406 Intro to Building Construction	3
CVEN 3161 Mechanics of Materials 1	3
AREN 2120 Fluid Mechanics & Heat Transfer	3
GEEN 1300 Intro to Engineering Computing	3

JUNIOR YEAR

Fall Semester

CVEN 3525 Structural Analysis	3
AREN 3540 Illumination 1	3
AREN 3010 Mechanical Sys for Buildings	3
CVEN 3246 Introduction to Construction	3
ECEN 3030 Circuits	3

Spring Semester

AREN 4420 Cost Engineering	3
AREN 4570 Electrical Systems	3
Technical Elective	3
Technical Elective	3
CVEN 4545 Steel Design	3
OR CVEN 4555 Reinforced Concrete Design	

SENIOR YEAR

Fall Semester

Technical Elective	3
Technical Elective	3
ARCH 3114 Hist & Theories of Arch 1	3
ARCH 4010 Arch Apprec & Design	6
WRTG 3030 Writing on Science & Society	3

Spring Semester

AREN 4317 Architectural Engr Design	4
ARCH 3214 Hist/Theories Arch 2	3
Technical Elective	3
Technical Elective	3
Social Science/Humanities Elective	3

Department and Laboratory Resources:

12 general purpose static and dynamic servocontrolled actuators

8 universal testing machines for experiments on building components and materials

Multi-axial cubical materials testing apparatuses

State-of-the-art HVAC facility

Illumination Laboratory

Freshman Computer Aided Design Laboratory

M.Y. Leung Computational Laboratory for Soils and Structures

15 g-ton and 440 g-ton geotechnical centrifuges

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

