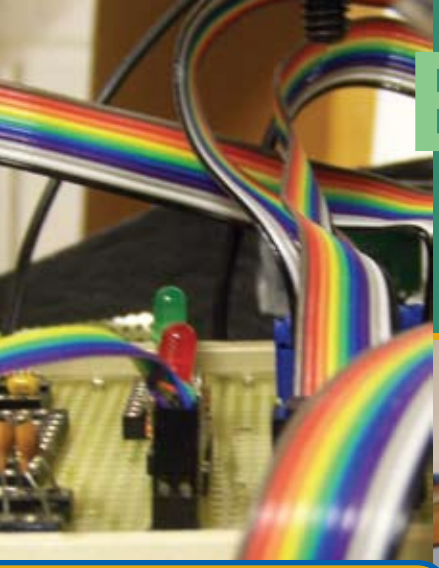

Electrical & Computer engineering

Did You Know?

As senior vice president of GE Global Research, ECE alumnus Scott Donnelly (1984) heads up the long-range research activities of 2,500 scientists and engineers researching emerging technologies such as biotechnology, sustainable energy, and nanotechnology.

Students in department:
ECEN: 179 undergraduates
EEEN: 153 undergraduates
EEEN: 248 grad students

Faculty:
40 faculty

Research:
10 major areas of research
$7.8 million in research funds (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 computer engineering is 21st among public institutions (USNWR).

Colorado
University of Colorado at Boulder

Electrical and computer engineering is a necessary part of most consumer appliances. Computer engineering is applied in a number of industries such as aerospace electronics, wireless network connections, robotics, and biomedical instruments.

A degree in electrical and computer engineering prepares students for challenging careers in either field as well as careers in the broad intersection of these disciplines. The University of Colorado at Boulder's Department of Electrical and Computer Engineering provides students with a strong foundation in the fundamentals, as well as extensive elective courses that allow each student to specialize in a specific interest area. With a lab-intensive curriculum and world-class research program, our curriculum offers an exciting environment that prepares students for successful careers in the most widely employable engineering discipline.

"I got to build a mini-satellite my freshman year, and got the chance to be a project manager for that project. It's so much more fun to learn by doing than by just cracking open a textbook."

— Vivian Phinney

Hands-on Learning

At CU, students learn by doing. Electrical and computer engineering undergraduates gain hands-on experience through extensive laboratory components within the curriculum as well as undergraduate research projects, NASA-funded design and build projects through the Space Grant program, Earn-Learn apprenticeships, internships, and co-op positions in industry.

Fifty percent of ECE undergrads work in internships and co-op jobs in industry during an academic semester or over the summer.

A degree in electrical and computer engineering prepares students for careers in:

- computer engineering
- computer hardware design
- wireless communication
- biomedical engineering
- automation and manufacturing
- semiconductors

Electrical & Computer curriculum

128 semester credit hours required

(Sample Curriculum)

(The freshman and sophomore years are identical for the Electrical Engineering and the Electrical and Computer Engineering curricula. Starting with the junior year, electrical engineering majors are able to take a variety of elective courses that reflect their individual interests. ECEN courses listed with 5 credit hours are courses with three hours per week of lecture and four hours per week of laboratory.)

FRESHMAN YEAR	Credits
Fall Semester	16
APPM 1350 Calculus 1 for Engineers	4
CSCI 1300 Computer Science I: Programming	4
ECEN 1100 Freshman Seminar	1
PHYS 1110 General Physics 1	4
Humanities and Social Science Elective	3
Spring Semester	15
APPM 1360 Calculus 2 for Engineers	4
CHEN 1211 General Chemistry for Engineers	3
CHEM 1221 General Chemistry Lab	2
Freshman Elective (see below)	3
Humanities and Social Science Elective	3

SOPHOMORE YEAR	Credits
Fall Semester	17
APPM 2360 Diff Eq with Linear Algebra	4
ECEN 2250 Circuits/Electronics	5
ECEN 2120 Computers as Components	5
Humanities and Social Science Elective	3
Spring Semester	17
APPM 2350 Calculus 3 for Engineers	4
ECEN 2260 Circuits/Electronics 2	5
ECEN 3100 Digital Logic	5
Humanities and Social Science Elective	3

JUNIOR YEAR	Credits
Fall Semester	17
ECEN 3300 Linear Systems	5
ECEN 3400 Electromagnetic Fields & Waves	5
ECEN 3810 Intro. to Probability	3
CSCI 2270 CS II: Data Structures	4
Spring Semester	14
Software Elective (see below)	3
ECEN 3250 Circuits/Electronics 3	5
ECEN 4593 Computer Organization	3
WRTG 3030 Writing on Science & Society	3

SENIOR YEAR	Credits
Fall Semester	17
1 senior-level theory course	3
1 senior-level lab course	2
PHYS 2130 General Physics	3
Technical Elective	3
Humanities & Social Science Elective	3
Free Elective	3
Spring Semester	15
ECEN 4610 Capstone Lab	3
ECEN 4703 Discrete Mathematics	3
Software Electives	3
Humanities & Social Science Elective	3
Free Elective	3

Software Electives (choose 1)

ECEN 4563-3	CSCI 4273-3
ECEN 4583-3	CSCI 4576-3
CSCI 3287-3	CSCI 4586-3
CSCI 3308-3	CSCI 4753-3
CSCI 3753-4	

Freshman Electives (choose 1)	Credits
ECEN 1400 Intro to Digital and Analog Electronics	3
Generaly Biology 1 plus lab (EPOB or MCDB)	3
Freshman projects course	3

Undergraduates can join ECE faculty doing cutting edge research in the areas of:

- Nanotechnology and nanomaterials
- Renewable energy and energy systems
- Optics, optoelectronics, and photonics
- Controls and robotics
- Electromagnetics, RF, and microwaves
- Analog electronics and power electronics
- Computer engineering
- Communication, signal, and image processing
- Geoscience and remote sensing
- Biomedical and bioengineering

For more information visit http://ece-www.colorado.edu

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