

NEW CURRICULUM:

PROGRAM OVERVIEW

The Bachelor of Science in Electrical Engineering, provides an ABET-accredited undergraduate education to a diverse group of students of different racial and cultural backgrounds, full-time students as well as those who have considerable work and family commitments outside their academic learning and students with a wide variety of work experiences. The department strives to continually update our program of study to qualify our graduates for technical positions in the Denver metropolitan area and beyond, while also providing sufficient breadth and depth to assure our graduates of success in their chosen profession. The electrical engineering program stresses the rigorous scientific and theoretical foundations of the discipline so our graduates can enter any advanced level educational program with the critical thinking skills needed for success. In addition, the program includes interdisciplinary work. Our electrical engineering graduates are productive engineers who can advance their careers on different professional tracks in the engineering industry.

ACADEMIC ADVISING

Advising in the College of Engineering, Design and Computing (CEDC) depends on your student standing—undergraduate students either are pre-engineering or are admitted to the college, depending on degree progress. *Pre-engineering* students must meet with an advisor either in the Academic Success and Advising Center (ASAC; Student Commons 1113; 303-315-1940) each semester before they can register for classes or with an ESSC advisor, 303-315-7510.

Students admitted to the College of Engineering, Design and Computing (CEDC) who have declared a major are required to meet with an advisor in their specific department and should contact that department to schedule an appointment.

Students admitted to the College of Engineering, Design and Computing who have not declared a major are required to meet with an advisor in the Engineering Student Services Center (ESSC).

Electrical Engineering

electrical@ucdenver.edu

Visit the department website [here](#)

North Classroom 2615

303-315-7520

Engineering Student Services Center (ESSC)

CEASstudentservices@ucdenver.edu

Visit the ESSC website [here](#)

North Classroom 2605

303-315-7510

GENERAL GRADUATION REQUIREMENTS & POLICIES

Achieve a minimum 2.0 CU cumulative grade point average (GPA)

Complete all college and major requirements

Residency: complete a minimum of 40 EE hours as a declared CEAS student in good standing at CU Denver

PROGRAM REQUIREMENTS & POLICIES

Electrical Engineering B.S. Degree are required to complete the following minimum program requirements:

1. Complete 24 semester hours of CU Denver Core Curriculum coursework.
2. Complete a minimum of 30 semester hours of pre-major coursework.
3. Complete a minimum of 74 semester hours of electrical engineering coursework.

Courses	Credits	Notes
* Course prerequisites change regularly. Students are responsible for consulting advisors and the class schedule in the student portal for prerequisite information. *		
Required CU Denver Core Curriculum Coursework	24	Create and link to a common CU Denver Core Curriculum Handout
Required EE Pre-Major Coursework		
MATH1401 Calculus I	4	*Prerequisite: Placement; fulfills CORE Mathematics
MATH2411 Calculus II	4	*Prerequisite: C- or better in MATH1401
MATH2421 Calculus III	4	*Prerequisite: C- or better in MATH2411
MATH3195 Linear Algebra and Differential Equations	4	*Prerequisite: C- or better in MATH2411
ENGR 1130 Chemistry for Engineers	5	
PHYS 2311 & 2321 General Physics I with lab	5	*Prerequisite: MATH1401
PHYS 2331 General Physics II	4	*Prerequisite: PHYS 2311 and MATH 2411
Required EE Pre-Major Coursework	30	

SAMPLE ACADEMIC PLAN OF STUDY

The following academic plan is a *sample* pathway to completing degree requirements for this major. Students should tailor this plan based on previously completed college coursework (e.g., AP, IB, CLEP, dual/concurrent enrollment, and transfer credit), course availability, and individual preferences related to course load, schedules, or add-on programs such as minors or double-majors. Students deviating from this plan must fulfill course prerequisites and must meet with the faculty advisor each semester in their department to confirm degree requirements.

Year One	Semester 1		CRS
	MATH 1401 Calculus I		4
	ENGR 1130 Chemistry for Engineers		5
	ENGR 1200 Engineering Design		3
	ELEC 1510 Logic Design		3
			15

Semester 2		CRS
PHYS 2311/2321 General Physics I & Lab		5
MATH2411 Calculus II		4
ELEC 1520 Programming for Electrical Engineering		3
ELEC 2531 Logic Laboratory		1
CU Core Curriculum Course- Engl 1020		3
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ELECTRICAL ENGINEERING

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Year Two	Semester 3	CRS
	MATH2421 Calculus III	4
	ELEC 2132 Circuits Analysis II	3
	PHYS2331 General Physics II	4
	ENGL 2030 Core Composition II	3
	MATH 3195 OR MATH 3191 AND MATH 3200 Linear Alg & Diff. EQU	4
	18	

Semester 4	CRS
ELEC 2142 Circuits Analysis II	3
ELEC 2520 Embedded Systems Engr.	3
ELEC 3817 Eng. Probability and Stat.	3
ELEC 2651 Signal processing	
CU Core Curriculum Course	3
	15

Semester 5	CRS
ELEC 3133 Electromagnetic Fields	3
ELEC 3225 Electronics	4
ELEC 3316 Linear Systems	3
ELEC 3900 Fabrication and Design Lab	3
CU Core Curriculum	3
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Semester 6	CRS
ELEC 3164 Energy Systems	3
ELEC 3520 AI-IOT	3
ELEC 3701 Machine Learning for EE	3
ELEC 3724 Energy Systems Lab	1
ELEC Specialty 4xxx & Lab	4
CU Core Curriculum	3
	17

Semester 7	CRS
ELEC 4309 Senior Design I project- Fall only course	3
ENGR 3400 Technology and Culture	3
ELEC Specialty 4xxx	3
ELEC Specialty 4xxx	3
CU Core Curriculum	3
	15

Semester 8	CRS
ELEC 4319 Senior Design II project- Spring only course	3
ELEC Specialty & Lab	4
ELEC Specialty	3
Professional Elective	3
CU Core Curriculum	3
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Courses	Credits	Notes
* Course prerequisites change regularly. Students are responsible for consulting advisors and the class schedule in the student portal for prerequisite information. *		
Required Coursework (Continued)		
ENGR 1200 Engineering Design	3	
ELEC 1510 Digital Logic	3	
ELEC 1520 Programming for Elec. Engineers	3	*
ELEC 2132 Circuits Analysis I	3	*Prerequisite: PHYS 2311 and MATH 2411
ELEC 2142 Circuits Analysis II	3	* Prerequisite: MATH 2421, PHYS 2331 and ELEC 2132
ELEC 2531 Logic Lab	1	* Prerequisite: ELEC 1510
ELEC 2520 Embedded Systems Engr.	3	* Prerequisite: ELEC 1520
ELEC 2651 Signal processing	3	* Corequisite: Math 3195,
ELEC 3133 Electromagnetic Fields	3	* Prerequisite: MATH 3195, MATH 2421, PHYS 2331 and ELEC 2132
ELEC 3164 Energy Systems	3	* Prerequisite: ELEC 2142
ELEC 3225 Electronics	4	* Prerequisite: ELEC 2142 and ENGR 1130
ELEC 3316 Signals and Systems	3	*Prerequisite: Elec 2142 and Elec 2651
ELEC 3520 AI-IOT	3	*Prerequisite: Elec 2520 and Elec 2531
Elec 3701 Machine Learning	3	*Prerequisite: Elec 3817, Elec 2520 and Math 3195
ELEC 3724 Energy Systems Lab	1	*Prerequisite: ELEC 2142 and Co-Requisite ELEC 3164
ELEC 3817 Probability and Statics	3	* Prerequisite: MATH 3195, MATH 2421
ELEC 3900 Circuit Design and Fab. Lab	3	* Prerequisite: ELEC 2142 Co-requisite Elec 3225
Total Required EE credit hours:	48	
Senior Capstone Courses: ELEC Senior Design I and Design II Elec 4309 and Elec 4319	6	
EE Senior Specialty courses with 2 Labs Choose five approved Electrical Engineering Specialty Courses plus two one hour labs. One professional Electives: The list of course to choose from are posted in the EE Undergraduate program guide.	17 3	Check individual courses for prerequisites
Total Program Hours:	128	

All CU Denver CEDC EE students are required to complete the following minimum general graduation requirements:
Complete a minimum of 128 semester hours



College of Engineering,
Design and Computing
UNIVERSITY OF COLORADO **DENVER**

ELECTRICAL ENGINEERING

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