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.

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 area of interest.

Electrical Engineering
electrical@ucdenver.edu
Visit the department website here
North Classroom 2615
303-315-7520

Pre-engineering- Electrical Interest
Email: electrical@ucdenver.edu
Phone: 303-315-7520

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.
   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	

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	* Corequisite: ELEC 1510	
ELEC 2520 Embedded Systems Engr.	3	* Prerequisite: ELEC 1520	
ELEC 2651 Signal processing	3	* Corequisite: Math 3195 , Pre-req: ELEC 1520	
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, PHYS 2331 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 Pre-req: 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 Elective: Total Program Hours:	17 3 128	*Check individual courses for prerequisites*	

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.

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

Semester 2	CRS
PHYS 2311/2321 General Physics I & Lab	5
MATH 2411 Calculus II	4
ELEC 1520 Programming for Electrical Engineering	3
ELEC 2531 Logic Laboratory	1
CU Core Curriculum Course- Engl 1020	3
	16

Semester 3	CRS
MATH 2421 Calculus III	4
ELEC 2132 Circuits Analysis I	3
PHYS 2331 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 3133 Electromagnetic Fields	3
ELEC 2651 Signal processing	
CU Core Curriculum Course	3
	15

Semester 5	CRS
ELEC 3817 Probability and Stats fall only	3
ELEC 3225 Electronics	4
ELEC 3316 Linear Systems	3
ELEC 3174/3724 Energy System and Lab	4
CU Core Curriculum	3
	17

Semester 6	CRS
ELEC 3900 Circuit Design and Fabrication Lab fall and summer	3
ELEC 3520 AI-IOT spring only	3
ELEC 3701 Machine Learning for EE spring only	3
ELEC Specialty 4xxx/4xxx LAB	4
CU Core Curriculum	3
	16

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 & lab	4
CU Core Curriculum	3
	16

Semester 8	CRS
ELEC 4319 Senior Design II project- Spring only course	3
ELEC Specialty	3
ELEC Specialty	3
Professional Elective	3
CU Core Curriculum	3
	15