

ELECTRICAL ENGINEERING B.S.EE.

The curriculum leading to the degree of Bachelor of Science in Electrical Engineering includes instruction in electrical and electronic circuits, energy systems, electromagnetics, semiconductor devices, signal processing, control systems, communications, digital systems, as well as in the physical sciences, humanities, and social sciences.

Engineering design is developed and integrated into each student’s program and culminates in a required major design experience which draws upon prior course work and which focuses on the issues and expectations of professional practice.

The Electrical and Computer Engineering Program provides a flexible and hands-on experience for its students. Students can explore the breadth of electrical engineering through electives or focus their studies in areas such as energy systems, computer systems, or autonomous systems.

ELECTRICAL ENGINEERING DEGREE PROGRAM EDUCATIONAL OBJECTIVES

The educational objectives of the Electrical Engineering program are to provide our graduates with disciplinary breadth and depth to fulfill complex professional and societal expectations by:

1. Pursuing careers as practicing engineers or using their program knowledge in a wide range of other professional, educational and service activities;
2. Assuming leadership roles and seeking continuous professional development;
3. Contributing to their profession and society while appreciating the importance of ethical and sustainable solutions for the betterment of society.

REQUIREMENTS

THE CURRICULUM FOR THE B.S. IN ELECTRICAL ENGINEERING

All students must meet the Degree and University Requirements.

All students must meet the Catamount Core Curriculum Requirements.

All students must meet the College Requirements.

Note that the University’s Sustainability (SU), Quantitative and Data Literacy (QD), Natural Sciences (both N1 and N2), Mathematics (MA), and Writing and Information Literacy Tier 2 (WIL 2) requirements are built into the Electrical Engineering curriculum. A minimum of 129 credits are required.

Requirement Description	Credits
GENERAL EDUCATION REQUIREMENTS (33 Credits)	
University WIL: Writing & Information Literacy	3

University D1: Diversity 1		3
University D1/D2: Diversity 1 or Diversity 2		3
University AH1/AH2/AH3: Arts & Humanities		6
University S1: Social Sciences		6
University GC: Global Citizenship		3
2000-Level or Higher Free Electives ¹		9
MATHEMATICS & STATISTICS REQUIREMENTS (19 Credits)		
MATH 1234	Calculus I	4
MATH 1248	Calculus II	4
MATH 2248	Calculus III	4
MATH 2500	Eng Math Linear Algebra Lab	1
MATH 3201	Adv Engineering Mathematics	3
STAT 2510	Applied Probability	3
COMPUTING & SCIENCE REQUIREMENTS (14 Credits)		
CS 1210	Computer Programming I	3
CHEM 1400	General Chemistry 1	4
PHYS 1500	Physics for Engineers I	4
PHYS 1550	Physics for Engineers II	3
ENGINEERING COURSE REQUIREMENTS (51 Credits)		
CEMS 1500	CEMS First Year Seminar ²	1
CEE 1150	Applied Mechanics	3
EE 1100	EE Principles and Design ³	2
EE 2125	Circuits I	4
EE 2135	Circuits II	4
EE 2185	Circuits Design Project ⁴	2
CMPE 2810	Fundamentals of Digital Design	4
EE 3110	Electronics I	4
EE 3100	Electromagnetic Field Theory	4
EE 3150	Signals & Systems	4
EE 3000	Engineering Ethics/Leadership	1
EE 3115	Electronics Laboratory	2
EE 3415	Electronics Design Project	3
CMPE 3815	Microcontroller Systems	4
EE 4100	Capstone Design I	3
EE 4200	Capstone Design II	3

EMGT 2041	Engineering Economics	3
EE/CMPE 3XXX or higher ECE Electives (12 Credits) ⁵		
TOTAL CREDITS		129
OPTIONAL/RECOMMENDED COURSES		
PHYS 1510	Physics Problem Solving I	
PHYS 1560	Physics Problem Solving II	
ENGR 1020	Graphical Communication	
CS 2100	Intermediate Programming	

¹ 2000-Level or Higher Free Electives: Free Electives allow students to further tailor their studies through, e.g., technical, general, and/or professional development electives. Students are encouraged to work with their advisor(s) to select courses that complement their curricula and support their academic and career goals (such as the pursuit of an EE certificate, additional EE courses in their field of interest, a minor in another discipline, or semester abroad).

² The First Year Seminar CEMS 1500 is designed for all first-year students in the College. Students entering the College after their first semester should work with their academic advisor to identify an appropriate substitution as approved for their major. The course used to fill CEMS 1500 requirement cannot be used to fulfill another requirement in the major.

³ EE 1100 is a degree requirement designed for first-year students. Students who enter the ECE program with advanced experience or are internal/external transfer students who join the College during their second year should work with their advisor to identify and appropriate 2000-level substitution as approved for their major. The course used to fulfill the EE 1100 requirement cannot be used to fulfill another requirement in the major.

⁴ Satisfies CEMS Professional Development Requirement.

⁵ No more than 6 credits of teaching assistantship, independent study, internship, and research.