

ELECTRICAL ENGINEERING PROGRAM

The program in Electrical Engineering consists of the Engineering Core, the Electrical Engineering Core, and one of five option choices plus 3 credits in general electives. The normal length of the program is 120 credits.

Credit	Course	Engineering Core	Prerequisite	Co-requisite
3.50	ELEC 273	Basic Circuit Analysis	PHYS 205	ENGR 213
3.00	ENCS 282	Technical Writing and Communication	Students must pass the Engineering Writing Test (EWT), or pass ENCS 272 with a grade of C- or higher	
1.50	ENGR 201	Professional Practice and Responsibility		
1.50	ENGR 202	Sustainable Development and Environmental Stewardship		
3.00	ENGR 213	Applied Ordinary Differential Equations	MATH 205	MATH 204
3.00	ENGR 233	Applied Advanced Calculus	MATH 204, 205	
3.00	ENGR 301	Engineering Management Principles and Economics		
3.00	ENGR 371	Probability and Statistics in Engineering	ENGR 213, 233	
3.00	ENGR 391	Numerical Methods in Engineering	ENGR 213, 233; COEN 243	
3.00	ENGR 392	Impact of Technology on Society	ENCS 282; ENGR 201, 202	
27.50	Total			
Credit	Course	Electrical Core	Prerequisite	Co-requisite
3.50	COEN 212	Digital Systems Design I	MATH 204	
3.00	COEN 231	Introduction to Discrete Mathematics	MATH 204	
3.50	COEN 243	Programming Methodology I	MATH 204	
3.00	COEN 244	Programming Methodology II	COEN 243	
3.50	COEN 311	Computer Organization and Software	COEN 212, 243	
3.50	COEN 313	Digital Systems Design II	COEN 212, 231	
3.00	COEN 352	Data Structures and Algorithms	COEN 231, 244	
3.00	ELEC 242	Continuous-Time Signals and Systems	ELEC 273; ENGR 213	
3.00	ELEC 251	Fundamentals of Applied Electromagnetics	ELEC 273 or ENGR 273	ENGR 233
3.50	ELEC 311	Electronics I	ELEC 273	
3.50	ELEC 312	Electronics II	ELEC 311; ELEC 242 or 364	
3.50	ELEC 321	Introduction to Semiconductor Materials and Devices	CHEM 205; ENGR 213	
3.50	ELEC 331	Fundamentals of Electrical Power Engineering	ELEC 251, 273	
3.50	ELEC 342	Discrete-Time Signals and Systems	ELEC 242 or 264	
3.00	ELEC 351	Electromagnetic Waves and Guiding Structures	ELEC 251, 242, ENGR 233	
3.50	ELEC 366	Telecommunication Networks	COEN 352, ELEC 342 or 364; ENGR 371	
3.50	ELEC 367	Introduction to Digital Communications	ELEC 342 or 364; ENGR 371	
3.50	ELEC 372	Fundamentals of Control Systems	ELEC 242 or 364	
3.00	ELEC 390	Electrical Engineering Product Design Project	Minimum of 45 credits in BEng (Electrical); COEN 352; ELEC 311; ENGR 290	
4.00	ELEC 490	Capstone Electrical Engineering Design Project	Minimum of 75 credits in BEng (Electrical) or permission of the Department; ENGR 301, 371; COEN 311; ELEC 342 or 364; ELEC 390; completion of 1 work term	
3.00	ENGR 290	Introductory Engineering Team Design Project	ENCS 282; ENGR 213, 233	
70.00	Total			
Credit		Electrical Technical Electives	Description	
19.50		Students must complete at least 19.50 from the Electrical Electives List. (See below)	Students who have taken 3 credit version of COEN 243, can add the .50 credits to their Electrical Engineering electives.. Instead of 19.50 credits you will complete 20 credits.	
		Telecommunication Networks & Signal Processing		
		Microdevices, Electronics & VLSI		
		Power and Renewable Energy Systems		
		Controls, Robotics & Avionics		
		Waves and Electromagnetics		
		Computer Systems		
		Biological & Biomedical Engineering		
		Other		
Credit		General Electives	Description	
3.00		General Education Elective or General Electives	Taken from section 71.110 from the Undergraduate Calendar	

*Note: Students may replace ELEC 490 with ENGR 490 if they are interested in a multidisciplinary project that requires collaboration with students from other engineering departments. In order for students to register in ENGR 490, their projects must be approved by the ENGR 490 Design Committee before the start of the fall term.