ELECTRICAL ENGINEERING MAJOR

Major Requirements

Bachelor of Science in Electrical Engineering

128 credits

Natural Science Requirements

Code	Title	Credits
MATH 1141	Calculus I for Chemistry, Engineering, and Physics Majors [1]	4
MATH 1142	Calculus II for Chemistry, Engineering, and Physics Majors [1]	4
MATH 2243	Calculus III for Chemistry, Engineering, and Physics Majors	4
MATH 2251	Ordinary Differential Equations	3
MATH 3351	Probability Theory	3
PHYS 1171 & 1171L	General Physics I and General Physics I Lab [1]	4
PHYS 1172 & 1172L	General Physics II and General Physics II Lab [1]	4
PHYS 3271	Electricity and Magnetism	3
Select one additional elective in Natural Sciences (with lab)		4
Total Credits		**33**

[1] Fulfills Magis Core requirement

Major Requirements

For a major in electrical engineering, students complete the following:

Code	Title	Credits
Electrical Engineering Major Requirements		
CPEG 2245	Digital Design I	3
CPEG 2245L	Digital Design I Lab	1
CPSC 1131	Fundamentals of Programming	3
ELEG 2213	Introduction to Electric Circuits	3
ELEG 2213L	Electric Circuits Lab	1
ELEG 3348	Embedded Microcontrollers	3
ELEG 3348L	Embedded Microcontrollers Lab	1
ENGR 1031	Fundamentals of Engineering	3
ENGR 2130	Engineering Graphics I	3
ELEG 2221	Frequency Domain Circuit Analysis	3
ELEG 3231	Introduction to Electronics Circuits and Devices	3
ELEG 3231L	Electronics Circuits Lab	1
ELEG 3301	Signal and Systems I	3
ELEG 4331	Analog Electronics Design	3
ELEG 4331L	Analog Electronics Lab	1
ENGR 2145	Mathematical Analysis	3
ENGR 4301	Feedback Control Systems	3
Select one elective in Mechanical Engineering		3
ENGR 4961	Senior Design Project I	3
ENGR 4962	Senior Design Project II	3
Select four Electrical and Computer Engineering Major electives [2]		12
Total Credits		**62**

[2] Major Electives are courses that enable students to explore areas of interest and obtain hands-on exposure to additional topics. These courses are taken in consultation with a curriculum adviser. Options may include courses in: Power Generation and Distribution, Power Electronics, Microelectronics, Nanoelectronics, Power Systems, Communications Systems, Computer Networks, Computer Architecture, and Digital Electronic Design II., Biomedical Signal Processing, Biomedical Imaging.

Note: In addition to the undergraduate courses listed, advanced juniors and seniors may take appropriate graduate courses as electives with the permission of the department chair and the instructor.

Computer Engineering Concentration

Students enrolled in the BS in Electrical Engineering program may also complete a concentration in Computer Engineering. The concentration consists of four courses, for a total of 13 or 14 credits. The courses include the following:

Code	Title	Credits
CPEG 3246	Digital Electronics Design II	3
CPEG 3346	Computer Systems Architecture	3
ELEG 3348 & 3348L	Embedded Microcontrollers and Embedded Microcontrollers Lab [3]	4
Select one course from the following:		3-4
CPEG 3331	Biomedical Signal Processing	
CPEG 4320	Computer Networks	
CPEG 4332	Biomedical Imaging	
CPSC 2232 & 2232L	Data Structures and Data Structures Lab	
Total Credits		**13-14**

[3] Required as part of the BS in Electrical Engineering degree.