ELECTRICAL ENGINEERING (BS)

Program Mission

The mission of Electrical Engineering Program is to provide a multidisciplinary engineering undergraduate education built on an authentically Catholic liberal arts foundation. Graduates of the program will be professionals who are excellent problem solvers, committed to the highest ethical standards, and proficient communicators. They will understand the role of engineering as a profession and their duty as engineers to promote the good of society.

Program Outcomes

The following are the program educational objectives used by the program for ABET accreditation, and thus are styled as broad statements describing the career and professional accomplishments that the program is preparing graduates to achieve.

1. Graduates will maintain a balanced lifestyle pursuing what is good, true, and beautiful. As they live out their vocation, they will contribute significantly to personal, family, workplace, community, and church endeavors.
2. Graduates will demonstrate technical knowledge and expertise in their profession and will innovate beyond the state of the art.
3. Graduates will demonstrate interpersonal and professional skills to effectively lead teams and projects of substantial size.

Program Requirements

Code	Title	Hours
Required General Education Courses		
PHIL-3250	Ethics	3
THEO-2000	Christian Moral Life	3
Science and Mathematics		
CHEM-1200 & CHEM-1201	General Chemistry I Lecture and General Chemistry I Laboratory [1, 2]	4
Mathematics or Science Electives		3
CSCI-2300	Programming for Scientists & Engineers	3
MATH-1300	Calculus I [1, 2]	4
MATH-1350	Calculus II [1, 2]	4
MATH-2300	Calculus III	4
MATH-2500	Linear Algebra	3
MATH-3100	Differential Equations	3
Complete the following sequences: [1]		8
PHYS-2100 & PHYS-2101	Classical Physics I and Classical Physics I Lab [1, 2]	
PHYS-2110 & PHYS-2111	Classical Physics II and Classical Physics II Lab [1, 2]	
Engineering Courses		
EENG-2010	Introduction to Digital Electronics [1, 2]	2
EENG-2020	Digital Electronics Laboratory	1
EENG-2060	Linear Circuit Analysis I [1,2]	3
EENG-3060	Circuits Laboratory I	1
EENG-3070	Circuits Laboratory II	1
EENG-3080	Electronics Laboratory I	1
EENG-3090	Electronics Laboratory II	1
EENG-3130	Linear Circuit Analysis II	3
EENG-3140	Signals & Systems [1, 2]	3
EENG-3160	Electric & Magnetic Fields [1, 2]	3
EENG-3210	Electronics I [1, 2]	3
EENG-4050	Control Systems I	3
EENG-4060	Control Systems Laboratory	1
EENG-4090	Applied Electromagnetics	3
EENG-4210	Electronics II [1, 2]	3
EENG-4010 & EENG-4020 or EENG-4510	Electric Drives and Electric Drives Lab Computer Hardware	3
EENG-4520	Embedded Systems	2
EENG-4530	Embedded Systems Laboratory	1
EENG-4600	Electrical Engin Design I	3
EENG-4610	Electrical Engin Design II	3
ENGR-1200	Introduction to Engineering [1, 2]	2
ENGR-3150	Statistical Analysis of Data	3
ENGR-3170	Engineering Economy & Society	3
ENGR-COMP	Senior Comprehensive Exam	0
Technical Electives		12
Total Hours		**106**

[1] These courses must be completed with a "C" or better.
[2] These courses must be completed with a "C" or better to proceed to the next class in Electrical Engineering.

Courses required for the major may be repeated but students must pass all required courses on their first or second attempt.

Technical Electives

The following courses will count as Technical Electives (other courses may be approved by the School of Engineering):

Code	Title	Hours
Any CSCI-3000+ course		
Any EENG-3000+ course not already required for the degree		
CSCI-2150	Introduction to Computer Science II	4
CSCI-2560	Discrete Mathematical Structures II	3
ENGR-2300	Statics	3
ENGR-2310	Dynamics	3
ENGR-2320	Mechanics of Materials	3
ENGR-3250	Thermodynamics	3
ENGR-3300	Fluid Mechanics	3
ENGR-3400	Materials Laboratory	2
MENG-4730	Mechanical Measurements & Control Lab	2

Mathematics or Science Electives

The following courses will count as a Mathematics or Science Elective:

Code	Title	Hours
CHEM-1210 & CHEM-1211	General Chemistry II Lecture and General Chemistry II Lab	4
CSCI-1140	Introduction to Computer Science I	4
MATH-2550	Discrete Mathematical Structures I	3

Any PHYS 3000+ course not already utilized for other degree requirements

Suggested Sequence of Courses for a Bachelor of Science Degree in Electrical Engineering

Course	Title	Hours
Freshman Year		
First Semester		
ENGR-1200	Introduction to Engineering	2
CHEM-1200	General Chemistry I Lecture	3
CHEM-1201	General Chemistry I Laboratory	1
MATH-1300	Calculus I	4
PHYS-2100	Classical Physics I	3
PHYS-2101	Classical Physics I Lab	1
ENGL-1010	English Composition	3
GNST-1000	BC Experience	1
	Hours	**18**
Second Semester		
MATH-1350	Calculus II	4
PHYS-2110	Classical Physics II	3
PHYS-2111	Classical Physics II Lab	1
THEO-1100	Introduction to Theology	3
PHIL-1750	Principles of Nature	3
EENG-2010	Introduction to Digital Electronics	2
EENG-2020	Digital Electronics Laboratory	1
	Hours	**17**
Sophomore Year		
First Semester		
EENG-2060	Linear Circuit Analysis I	3
EENG-3060	Circuits Laboratory I	1
ENGR-3150	Statistical Analysis of Data	3
MATH-2300	Calculus III	4
THEO-2000	Christian Moral Life	3
EXSC-1115	Wellness for Life	1
	Hours	**15**
Second Semester		
EENG-3130	Linear Circuit Analysis II	3
CSCI-2300	Programming for Scientists & Engineers	3
MATH-3100	Differential Equations	3
MATH-2500	Linear Algebra	3
EENG-4520	Embedded Systems	2
EENG-4530	Embedded Systems Laboratory	1
	Hours	**15**
Junior Year		
First Semester		
EENG-3140	Signals & Systems	3
EENG-3160	Electric & Magnetic Fields	3
EENG-3210	Electronics I	3
EENG-3080	Electronics Laboratory I	1
PHIL-3250	Ethics	3
Technical Elective		3
	Hours	**16**
Second Semester		
EENG-4090	Applied Electromagnetics	3
EENG-4210	Electronics II	3
EENG-3090	Electronics Laboratory II	1
EENG-4050	Control Systems I	3
Faith Foundation		3
EENG-4060	Control Systems Laboratory	1
Mathematics or Science Electives		3
	Hours	**17**
Senior Year		
First Semester		
EENG-4600	Electrical Engin Design I	3
Technical Elective		3
ENGR-3170	Engineering Economy & Society	3
Historical Foundation		3
EXSC Fitness Course		1
Foreign Language		4
	Hours	**17**
Second Semester		
EENG-4610	Electrical Engin Design II	3
EENG-4010	Electric Drives	2
Technical Elective		3
Aesthetic Foundation		3
Foreign Language		4
EENG-4020	Electric Drives Lab	1
	Hours	**16**
Ninth Semester		
Technical Elective		3
Senior Comp. Examination		0
Historical Foundation		3
Philosophical Inquiry		3
Aesthetic Experience		3
	Hours	**12**
	Total Hours	**143**