



Electrical Engineering

College of Engineering

The Electrical Engineering program prepares students for a productive career in engineering through developing strong foundations in math, physics, computer, and general engineering skills necessary for contributing to a rapidly developing field. In the junior and senior years, the program includes courses in specific application areas such as computer engineering, electronics, fields and waves, optics, communications, controls, machinery, and power systems.

The undergraduate education program focuses on achieving the following goals:

- Maintain a curriculum focused on developing relevant engineering skills, knowledge, and experience with current technologies.
- Provide opportunities for students to develop leadership, communication, and teamwork skills.
- Provide an environment that encourages independent learning, problem identification, and problem solving.
- Raise awareness of the engineers' professional and ethical responsibilities to society.

Degree Requirements

The following curriculum meets the requirements for a B.S. in Electrical Engineering, provided the student satisfies University Studies requirements and graduation requirements of the College of Engineering.

Freshman Year

First Semester	Hours
EE 101 Electrical Engineering Professions Seminar	1
MA 113 Calculus I	4
CHE 105 General College Chemistry I	3
CS 115 Introduction to Computer Programming	3
ENG 101 Writing I	3
University Studies*	3
Second Semester	
MA 114 Calculus II	4
PHY 231 General University Physics	4
PHY 241 General University Physics Laboratory	1
ENG 102 Writing II	3
University Studies Oral Communication	3

Sophomore Year

First Semester	Hours
MA 213 Calculus III	4
PHY 232 General University Physics	4
PHY 242 General University Physics Laboratory	1
EE 211 Circuits I	4
University Studies*	3
Second Semester	
MA 214 Calculus IV	3
EE 221 Circuits II	3
EE 222 Electrical Engineering Laboratory I	2
Engineering/Science Elective [E]	3
EE 280 Design of Logic Circuits	3
University Studies*	3

Junior Year

First Semester	Hours
EE 415G Electromechanics	3
EE 360 Introduction to Semiconductor Devices	3
EE 421G Signals and Systems I	3
EE 416G Energy Conversion Laboratory or	
EE 481 Logical Design Laboratory	2
EE 380 Computer Organization	3

MA 320 Introductory Probability	3
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Second Semester

EE 461G Introduction to Electronics	3
Engineering/Science Elective [E]	3
EE 468G Introduction to Engineering Electromagnetics	4
EE 462G Electronic Circuits Laboratory	2
EE 422G Signals and Systems II	3

Senior Year

First Semester	Hours
Technical Elective [T]	3
Math/Statistics Elective [M]	3
EE Technical Electives***	6
University Studies*	3
Engineering/Science Elective [E]	3
Second Semester	
EE 499 Electrical Engineering Design	3
EE Technical Electives***	6
Supportive Elective**	3
University Studies*	3

*To be selected from University Studies areas in Social Sciences, Oral Communication, Humanities and Cross-Cultural in consultation with the academic advisor.

**Supportive elective is to be chosen from any University courses, excluding more elementary versions of required courses, such as precalculus mathematics or PHY 211.

[M] **Math/Statistics Elective:** Any upper-division (300-level or higher) math or statistics course (3 credit hours total).

[E] **Engineering/Science Electives:** Any engineering, science, computer science, or math course at the 200-level or higher, other than an electrical engineering course (9 credit hours total).

[T] **Technical elective** may be selected from upper division engineering, mathematics, statistics, computer science, physics, or other technically-related fields in consultation with the academic advisor (3 credit hours total).

***EE **Technical Electives:** Courses recommended as electrical engineering technical electives are listed below (each course is 3 credit hours):

EE 511 Introduction to Communication Systems
EE 512 Digital Communication Systems
EE 517 Advanced Electromechanics
EE 518 Electric Drives
EE 522 Antenna Design
EE 523 Microwave Circuit Design
EE 524 Solid State Physics
EE 525 Numerical Methods and Electromagnetics
EE 527 Electromagnetic Compatibility
EE 537 Electric Power Systems I
EE 538 Electric Power Systems II
EE 560 Semiconductor Device Design
EE 561 Electric and Magnetic Properties of Materials
EE 562 Analog Electronic Circuits
EE 564 Digital Electronic Circuits
EE 565 Circuit Design With Analog Integrated Circuits
EE 567 Introduction to Lasers and Masers
EE 568 Fiber Optics
EE 569 Electronic Packaging Systems and Manufacturing Processes
EE 571 Feedback Control Design
EE 572 Digital Control of Dynamic Systems
EE 581 Advanced Logical Design
EE 582 Hardware Description Languages and Programmable Logic
EE 583 Microprocessors
EE 584 Introduction of VLSI Design and Testing
EE 585 Fault Tolerant Computing
EE 586 Communication and Switching Networks
EE 587 Microcomputer Systems Design
EE 599 Topics in Electrical Engineering (Subtitle required)