

Electrical Engineering

Bachelor of Science

Options in:

Digital Systems

Robotics and Automation

Electrical/Mechanical

Career Choices:

Design Engineer

Robotics Engineer

Systems Engineer

Project Engineer

Software Engineer

Manufacturing Engineer

Sales Engineering

Applications Engineer

Controls Engineer

Student Profile:

Do you ...

like problem solving?

like applying theories in laboratories?

like working with electrical circuitry?

want to design electrical systems to meet societal needs?

Program Description:

The electrical engineering program, which is accredited by EAC of ABET*, combines topics from science, math and engineering in order to study and develop solutions to electrical and computer problems. The program contains a strong laboratory emphasis with plenty of opportunities to work on real electrical systems. Some of the program highlights are:

- The teaching emphasis is on preparing you to solve real-world problems.
- You have three choices for fulfillment of your senior year experience. You may pursue opportunities in cooperative education, industry-based projects or research projects.
- You will study assembly language, circuit design, microcontroller hardware and software, digital electronics, and networks.
- Engineering courses begin in your freshman year.
- The program provides an excellent mix of theory and practical laboratory experiences.

Your Degree Options — You may choose to follow one of the following degree options while studying electrical engineering at LSSU. They are *digital systems, robotics and automation, or electrical/mechanical*. The *digital systems option* will give you additional knowledge in digital design, digital signal processing and microcontroller systems. The *robotics and automation option* provides you with a strong background in robotics, machine vision, sensors, communications and automation. If you plan to pursue graduate study, then the broader *electrical/mechanical option* is designed for you.

Career Description:

Once you graduate from LSSU, you will have many electrical engineering career choices. Typical graduates have obtained engineering positions in electrical systems design, microcontroller systems design, robotics, automation, product or process development, research and development, applications, maintenance, or sales.

Cooperative Education:

Opportunities are available as part of this program for students who are qualified. A certificate that documents this practical training is available.

**Engineering Accreditation Commission (EAC) of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012. Phone: 410-347-7700*

Electrical Engineering

Electrical Engineering Bachelor of Science

Minimum of 128 credits

Departmental Requirements (104 Credits)

Mathematics

MATH151	Calculus I	4
MATH152	Calculus II	4
MATH251	Calculus III	4
MATH308	Probability and Mathematical Statistics	3
MATH310	Differential Equations	3

Sciences

CHEM115	General Chemistry I	5
PHYS231	Applied Physics for Engineers and Scientists I	4
PHYS232	Applied Physics for Engineers and Scientists II	4

Engineering

EGEE125	Digital Fundamentals	4
EGEE210	Circuit Analysis	4
EGEE250	Microcontroller Fundamentals	4
EGEE280	Introductory Signal Processing	4
EGEE310	Network Analysis	4
EGEE330	Electro-Mechanical Systems	4
EGEE345	Fundamentals of Engineering Electromagnetics	3
EGEE370	Electronic Devices	4
EGEE375	Electronic Circuits	4
EGNR101	Introduction to Engineering	2
EGNR140	Linear Algebra and Numerical Methods for Engineers	2
EGNR265	"C" Programming	3
EGNR340	Advanced Numerical Methods for Engineers	1
EGNR346	Probability and Statistics Lab for Engineers	1
EGEM220	Statics	3
EGRS460	Control Systems	4
EGRS461	Design of Control Systems	4

General Education Requirements

COMM101	Fund. of Speech Communication	3
ENGL110	First-Year Composition I	3
ENGL111	First-Year Composition II	3
HUMN251	Humanities I	4
	Humanities	3
	Social Science	6
	Social Science Diversity	3

Select one of the following options to complete the Electrical Engineering degree:

Digital Systems Option

EGEE320	Digital Design	4
EGEE355	Microcontroller Systems	4
EGEE425	Digital Signal Processing	3

Robotics and Automation Option

EGRS385	Robotics Engineering	3
EGRS430	Systems Integration & Machine Vision	4
EGRS435	Automated Manufacturing Systems	4

Electrical/Mechanical Option

EGEM320	Dynamics	4
EGME225	Strength of Materials I	3
EGME337	Thermodynamics	4

Select one of the following Senior Sequence options to complete the Electrical Engineering degree:

Industrial Project

EG491	Engineering Design Project I	3
EG495	Engineering Design Project II	3

Cooperative Project

EG250	Cooperative Education	2
EG450	Cooperative Education Project I	2
EG451	Cooperative Education Project II	2
EG491	Engineering Design Project I	3

Research Project

EG260	Engineering Research Methods	2
EG460	Engineering Research Project I	4
EG461	Engineering Research Project II	2

Bachelor of Science Degree:

At least eight (8) semester credits *in addition* to courses used for general education requirements from categories of social science, natural science or mathematics.

These bachelor of science degree requirements can be used for majors or minors, but not general education.