

UNDERGRADUATE

Electrical Engineering

School of Engineering
Department of Electrical and
Computer Engineering

SIUE



siue.edu/electrical-engineering-info

Electrical Engineering at SIUE

Electrical engineering and computer engineering disciplines are concerned with the development and application of electrical and computer technology to enhance and enrich all life. Electrical and computer engineers are engaged in a wide variety of activities that include:

- Space exploration and remote sensing
- Process control and automation
- Automatic control systems for use in robotics, missiles, aircraft and manufacturing plants
- Electric power generation and distribution, environmentally responsible generation and use of energy
- Audio- video- and data-communication systems, and satellite communications
- Digital processing of signals and images using the computer
- Design and manufacturing of faster and more capable microprocessors for the computers of tomorrow
- Applications of technology in the healthcare field through computerized ultrasound, radiology, tomography and imaging systems, computer-aided diagnosis and treatment, and telesurgery

The applications listed above require a solid foundation in mathematics and physics, which means that electrical and computer engineering students are required to go through a substantial set of courses in these areas. In addition, today's engineers must also be aware of a wide variety of global, social, ethical, economic and environmental issues that are relevant to the systems they design and build. Our bachelor's degree program includes courses and projects designed to build this awareness.

Our students have access to several well-equipped modern laboratories for computation, simulation and measurement. Individual laboratories to support elective courses in the areas of computers, control, digital signal processing, image processing, and power also are available to students.

Degrees Available at SIUE

- Bachelor of Science, Electrical Engineering

What can I do with a degree in electrical engineering?

Electrical and computer engineers find employment in a wide variety of manufacturing companies.

- Aerospace and aircraft
- Electric manufacturers
- Computer circuit (a.k.a.: "chip") manufacturers
- Medical equipment manufacturers

They are employed in the fields of research, design, manufacturing and sales. Many public utilities, which include power companies and telephone companies, employ both computer engineers and electrical engineers.

Other potential employers include:

- Oil companies
- Railroads
- Food processing plants
- Chemical and biological laboratories
- Chemical plants
- Various branches of the federal government
- Consulting engineering companies

E SOUTHERN ILLINOIS UNIVERSITY
EDWARDSVILLE
SCHOOL OF ENGINEERING

Sample Curriculum for the Bachelor of Science in Electrical Engineering

	Fall Semester	Spring Semester		
Year 1	IE 106 Engineering Problem Solving MATH 150 Calculus I (FQR) CHEM 131 Engineering Chemistry (BPS) CHEM 135 Engineering Chemistry Lab (EL) ENG 101 English Composition I FST 101 Succeeding & Engaging at SIUE Total Credits	3 5 4 1 3 1 17	MATH 152 Calculus II (BPS) PHYS 141 Physics I for Engineering (BPS) PHYS 151L University Physics I Lab (EL) ENG 102 English Composition II ACS 103 Interpersonal Communication (EUSC) Total Credits	5 3 1 3 3 15
Year 2	ECE 210 Circuit Analysis I CS 145 Introduction to Computing I MATH 250 Calculus III (BPS) PHYS 142 Physics II for Engineering (BPS) PHYS 152L University Physics II Lab Total Credits	3 3 4 3 1 14	ECE 211 Circuit Analysis II ECE 282 Digital Systems Design MATH 305 Differential Equations I ECON 111 Macroeconomics (BSS) Breadth Fine & Performing Arts (BFPA) Total Credits	4 4 3 3 3 17
Year 3	ECE 326 Electronic Circuits I ECE 351 Signals and Systems ECE 352 Engineering Probability and Statistics MATH 355 Engineering Mathematics Health Experience (EH) Total Credits	4 3 3 5 0-2 15-17	ECE 340 Engineering Electromagnetics ECE 365 Control Systems ECE 375 Introduction to Communications (3) Non ECE Tech Elective (3) Breadth Info & Communication in Society (BICS) (3) Breadth Life Science (BLS) 18 - Total Credits	3 3 3 3 3 18
Year 4	ECE 404 ECE Design ECE 341 Electromechanical Energy Conversion ECE Elective I ECE Elective II PHIL 323 Engineering, Ethics & Professionalism (FRA, BHUM) Total Credits	3 4 3 3 3 16	ECE 405 ECE Design Laboratory ECE Elective III ECE Elective IV IE 345 Engineering Economic Analysis Interdisciplinary Studies/Experience Global Cultures (IS, EGC) Total Credits	3 3 3 3 3 15
		Total Hours		127-129

Transfer Students: To maximize your transfer experience, complete the **bolded** courses/requirements pre-transfer and satisfy the Illinois Articulation Initiative (IAI) General Ed Core or receive an AA, AS, or AAT (early childhood, special ed or math) degree from an IAI community college. If 'Academic Emphasis Area' requirements are shown, discuss careful course selection with the academic advising contact listed. Visit siue.edu/transfer to find course equivalency guides.

Accreditation

The electrical engineering program is accredited by the Engineering Accreditation Commission of ABET.



Admission Requirements

To be admitted to the Bachelor of Science program, students must:

- Complete all academic development courses required by the University
- Complete any courses required to address high school deficiencies
- Complete MATH 120, College Algebra (or high school equivalents) with a grade of C or better
- Attain a cumulative GPA of at least 2.0 (on a 4.0 scale)

Graduation Requirements

- Satisfactory completion of all University and degree requirements
- A cumulative GPA of 2.0 or higher for courses taught in the School of Engineering
- A GPA of 2.0 or higher in electrical engineering courses numbered above 299
- Completion of at least 30 hours of the required electrical engineering courses at SIUE