UNDERGRADUATE

Computer Engineering

School of Engineering
Department of Electrical and Computer Engineering

siue.edu/computer-engineering

Computer 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, as part of this mission, 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 tele-surgery.

The applications listed above require a solid foundation in mathematics and physics, which means 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, computer vision and image processing and power are also available to students.

Degrees Available at SIUE

- Bachelor of Science, Computer Engineering

What can I do with a degree in computer 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

Accreditation

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

ABET Engineering Accreditation Commission

SOUTHERN ILLINOIS UNIVERSITY EDWARDSVILLE
SCHOOL OF ENGINEERING

Sample Curriculum

	Fall Semester		Spring Semester	
Year 1	**MATH 150** Calculus I (FQR)	5	**CS 140** Introduction to Computing I	4
	CHEM 131 Engineering Chemistry (BPS)	4	**MATH 152** Calculus II (BPS)	5
	CHEM 135 Engineering Chemistry Lab (EL)	1	**PHYS 141** Physics I for Engineering (BPS)	3
	IE 106 Engineering Problem Solving	3	**PHYS 151L** University Physics I Lab (EL)	1
	ENG 101 English Composition I	3	ENG 102 English Composition II	3
	FST 101 Succeeding & Engaging at SIUE	1	Total Credits	16
	Total Credits	17		
Year 2	ECE 210 Circuit Analysis I	3	ECE 211 Circuit Analysis II	4
	CS 150 Introduction to Computing II	3	ECE 282 Digital Systems Design	4
	MATH 250 Calculus III (BPS)	4	CS 240 Introduction to Computing III	3
	PHYS 142 Physics II for Engineering (BPS)	3	MATH 305 Differential Equations I	3
	PHYS 152L University Physics II Lab (EL)	1	Total Credits	14
	ACS 103 Interpersonal Communication (EUSC)	3		
	Total Credits	17		
Year 3	ECE 326 Electronic Circuits I	4	ECE 381 Microcontrollers	3
	ECE 351 Signals and Systems	3	ECE 483 Adv. Digital Systems Eng.	3
	ECE 352 Engineering Probability and Statistics	3	ECE/CS Elective I	3
	CS 286 Intro to Computer Organization	3	ECON 111 Macroeconomics (BSS)	3
	MATH 224 Discrete Mathematics	3	Breadth Life Science (BLS)	3
	Total Credits	16	Breadth Fine & Performing Arts (BFPA)	3
			Total Credits	18
Year 4	ECE 404 ECE Design	3	ECE 405 ECE Design Laboratory	3
	CS 314 Operating Systems	3	ECE/CS Elective III	3
	ECE/CS Elective II	3	CS 340 Algorithms and Data Structures	3
	PHIL 323 Engineering, Ethics & Professionalism (FRA, BHUM)	3	IE 345 Engineering Economic Analysis	3
	Breadth Info & Communication in Society (BICS)	3	Interdisciplinary Studies (IS, EGC)	3
	Health Experience	0-2	Total Credits	15
	Total Credits	17		
			Total Hours	**128-130**

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.

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 and computer science courses numbered above 299
- Completion of at least 30 hours of the required electrical engineering and computer science courses at SIUE

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Contact Information
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Phone: 618-650-2524

This information is concurrent with the 2022-2023 academic catalog. Courses are subject to change at any time.