The Electrical Engineering curriculum is concerned with analysis and design of modern electronic systems, devices, and signals for a broad range of applications such as wireless or network communication, electrical power and control, and multimedia information technology. The curriculum provides a wide background in the fundamental theory of electrical engineering and in the mathematical and scientific tools necessary for an electrical engineer to meet the current and future challenges of a professional career. The field of electrical engineering is currently evolving at a rapid pace since it has a major role in the accelerated growth of the technological world. This requires the modern electrical engineer not only to have a sound basis in the fundamental principles but also to have the capacity to learn and assimilate novel advances as soon as they materialize. These qualities are anticipated in the curriculum, which includes not only a sound theoretical background but also offers a variety of courses that develop the student’s ability to gain knowledge autonomously and to combine it with contemporary design techniques. Courses are in diverse areas such as signal processing, power electronics, communications, optical and electromagnetic technologies, control systems, integrated circuits, multimedia networks, and image analysis.

The curriculum includes both required and elective courses. The required courses are in engineering, mathematics, and physics; they provide a wide backdrop in science and engineering. The elective courses are more specialized and offer a broad range of electrical engineering applications. Each student is assigned a faculty advisor who assists in the selection of the courses.

In addition to classroom experience, the Electrical Engineering curriculum is planned to provide laboratory experience in electrical and electronic circuits, electromagnetics, communication and signal processing, controls, computers, and digital systems. The curriculum incorporates design projects in the student’s experience starting from the freshman year and culminating in a capstone design project in the senior year. The project requires the students to undertake a significant group design that enriches their knowledge in practical aspects of engineering principles and methodologies. Most of these projects solve realistic problems and the results are presented in an exposition. The curriculum also requires the students to acquire oral and writing skills in expressing their professional ideas and ethical norms.
The educational objectives of the Computer Engineering undergraduate program are for its graduates to:

- Contribute to their employers, organizations, and communities.
- Be leaders in their professions around the world and expand engineering knowledge in a variety of communities.
- Practice and exhibit high ethical values and communicate effectively with colleagues and the public.
- Pursue advanced degrees or become engineers, researchers, innovators, consultants, or entrepreneurs.

Students are encouraged to participate in the activities of the student chapters of the Institute of Electrical and Electronic Engineers (IEEE) and the Association for Computing Machinery (ACM). An interest in robotics can be pursued by joining the Engineering Design Team, a College of Engineering student group. Qualified students will be invited to join Eta Kappa Nu, the honor society for electrical and computer engineers.

BS in Engineering Physics

The BS in Engineering Physics is offered by the Department of Electrical and Computer Engineering (College of Engineering) in association with the Department of Physics (College of Liberal Arts and Sciences).

The Engineering Physics major bridges the gap between science and technology by combining a strong background in physics and mathematics with exposure to the most fundamental areas of engineering. The program is based on the recognition that most engineering disciplines are rooted in the field of physics, and that new and emerging technologies rarely fall neatly within a single engineering discipline but often straddle different fields. The program highlights, for instance, the subtle and deep relations between materials science and civil engineering, between solid-state physics and chemical engineering, and between electromagnetics and telecommunication engineering.

This training is especially well suited to students who wish to pursue careers in research and development in advanced technology and applied science. In particular, students majoring in this program are well qualified to pursue graduate studies in most areas of engineering and applied physics. They may also pursue a master’s degree in education, thus qualifying to teach physics in high school.

The content of this program strongly emphasizes topics in physics and mathematics; however, this curriculum also gives students great flexibility in the choice of topics for technical electives. Students can customize their curriculum by choosing three technical elective courses from many fields.

The educational objectives of the Engineering Physics undergraduate program are for its graduates to:

- Contribute to their employers, organizations, and communities.
- Be leaders in their professions around the world and expand engineering knowledge in a variety of communities.
- Practice and exhibit high ethical values and communicate effectively with colleagues and the public.
- Pursue advanced degrees or become engineers, researchers, innovators, consultants, or entrepreneurs.

Students interested in the Engineering Physics major should contact the Department of Electrical and Computer Engineering at ugrad-info@ece.uic.edu (uslengthi@uic.edu).

Accreditation

- The computer engineering program at UIC is accredited by the Engineering Accreditation Commission of ABET
- The electrical engineering program at UIC is accredited by the Engineering Accreditation Commission of ABET
- The engineering physics program at UIC is accredited by the Engineering Accreditation Commission of ABET

Degree Programs

- BS in Electrical Engineering
- BS in Computer Engineering
- BS in Engineering Physics

Minors

- Minor in Electrical Engineering
- Minor in Computer Engineering