

ELECTRICAL ENGINEERING, B.S. (BEHREND)

Begin Campus: Any Penn State Campus

End Campus: Erie

Program Description

This major provides students with a strong foundation in electrical engineering through a combination of classroom study, projects, and laboratory experience. Analysis and design of electrical and computer systems are stressed. Built upon a core of science and mathematics courses, this major has the objective of educating graduates to be problem solvers. Students acquire the ability to work as members of a team toward successful attainment of a common goal, preparing them for work in industry, or further study in graduate school. In addition, written and oral communication skills are developed from an early stage, culminating in a senior design project that stresses communication as well as engineering content.

In addition to completing a broad-based science and mathematics core, students pursue their interest in electrical engineering by studying the principles of electrical circuits and microelectronics, digital and computer systems, control and communications systems, and electromagnetic fields and waves. Students obtain a broad-based electrical engineering education that is specialized through the selection of technical electives courses. The student will be required to analyze and solve a significant electrical engineering design problem during the senior year.

What is Electrical Engineering?

Electrical engineering is a broad discipline of study that includes circuit design, analog and digital electronics, electromagnetics, electro-optics, control systems, power systems, communications, and signal/image processing. Electrical engineers study and apply physics and mathematics to design electrical and electronic systems and their components for a wide range of applications such as mobile phones, wireless communications, consumer electronics, computers, computer networks, power generation, machine learning, robotics, nanoelectronics, nanophotonics, bioelectronics, autonomous transportation, wearable electronics, and metamaterials.

You Might Like This Program If...

- You are curious about how electrical and electronic systems function.
- You are interested in engineering, math, and physics.
- You are looking for a broad discipline with career flexibility.
- You enjoy working on team-based projects.