



## Program Objectives

San Diego State University B.S. program in Electrical Engineering provides the students the ability to work in the frontier of high technology and solve problems through the skillful application of mathematics and science. The major offers core courses in each of the major areas of electrical engineering: machines for processing and communication of information, the generation and distribution of electric power, and the study and application of electromagnetic phenomena.

Mastery of engineering design is emphasized through work on open-ended problems with realistic design constraints. The curriculum attempts to achieve a balance between theory and practice that will prepare graduates for both immediate employment and post-graduate study.

## Teaching Methodology

Electrical engineering students will find this program interesting and challenging. First-year courses include calculus, physics, and chemistry. During the second and third years students will take specific courses in the major. Upper-division classes allow students to put theory into practice with courses such as analog and digital circuit design, electronic materials, power systems, and electromagnetics. Each student will select from technical electives such as VLSI design (designing microchips), biomedical instrumentation, microwave transmission, communication systems, digital signal processing, microprocessors, multi-media programming, power systems design and analysis, optical electronics, and computer networks.

All students are required to participate in a “Capstone design” course, which emphasizes teamwork, oral and written communication skills and creative thinking.

## Career Opportunities

Because electrical engineering is such a broad discipline, a SDSU degree opens the doors to careers in any field that utilizes electrical devices or systems such as: mobile and communications and telecommunications, biotechnology, intelligent transport systems, space applications, geographic information systems, forensic sciences and criminology, military systems, and much more. Electrical engineers fabricate complex, tiny components that are used in computers, sensors, stereo systems, weather satellites, automobiles, modern appliances, and automated factories. It also allows for careers in the non-engineering technical side of the finance sector, actuaries and risk assessment, and many other social sciences needing the mathematics and analytical background to analyze big data.



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