



MONTANA
STATE UNIVERSITY

College of
ENGINEERING

What does it take to earn a BS degree in Electrical Engineering?

A BS degree in Electrical Engineering is earned through a 4-year program involving a fundamental understanding of electrical and electronic circuits and systems.

Electrical engineers get to work with microscopic circuit components fabricated with sub-micron precision ... *or* the power grid spanning thousands of kilometers across the country ... *or* communications with deep space probes billions of kilometers out in space ... *or anything and everything in between!* This vast range of opportunities requires preparation and a strong understanding of scientific principles, mathematical representations, and engineering innovation and design.

If you have already taken some college-level courses it is very likely that those credits will cover EE degree requirements — especially in the math, science, and general education areas.

Basic Math and Science Requirements

Calculus I

Calculus II

Multivariable Calculus

Differential Equations

Physics I (calculus-based)

Physics II

Physics III

Chemistry I

General Education Courses

"General Education" means "all the things educated people need to know," such as social science, artistic expression, writing, public speaking, history, philosophy, economics, psychology, cultural diversity, etc.

Digital Computer Introduction

Computer Programming

Microprocessor Systems

Digital Logic and Boolean Algebra

Electrical Circuit Introduction

Electrical Circuits I

Electrical Circuits II

Transistor Electronics

Electrical Engineering Circuit and System Details

Signals and Systems

Electrical Power and Energy Conversion

Electromagnetics

Electronic Materials

Control Systems

Telecommunications Systems

Professional Ethics

Engineering Design Process

Multidisciplinary Design

Senior Design Projects

Elective Courses in Engineering, Science, and Mathematics

Courses you choose to provide greater depth and breadth for establishing your initial career path as an electrical engineer. Examples include control systems, wireless communications, embedded computer design, lasers and optics, robotics, audio engineering, and alternative energy systems.

To learn more, contact the Montana State University ECE Department, ecedept@ece.montana.edu
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