



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

A BS degree in Computer Engineering (CpE) is earned through a 4-year program involving a fundamental understanding of electronic circuits, digital logic, and computer software systems.

Computer engineers get to work with the modern embedded computer processors that provide the electronic brains for mobile phones, autonomous vehicles, game consoles, aerospace systems, biomedical devices, and computer networks. This vast range of opportunities requires preparation and a strong understanding of scientific principles, electronic circuits, computer software, and engineering innovation and design.

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

Basic Math and Science Requirements

Calculus I

Multivariable Calculus

Physics I (calculus-based)

Calculus II

Differential Equations

Physics II

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 Languages

Microprocessor Systems

Digital Logic and Boolean Algebra

Algorithms and Software Design

Electrical Circuit Introduction

Electrical Circuits I

Electrical Circuits II

Transistor Electronics

Digital Logic Design

Electrical Engineering Circuit and System Details

Signals and Systems

Electromagnetics

Computational Computer Architecture

Control Systems

Digital Signal Processing

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 a computer engineer. Examples include advanced software, wireless communications, embedded computer design, lasers and optics, robotics, audio engineering, and computer vision.

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