

ELECTRICAL AND COMPUTER ENGINEERING MINOR

Banner Code: ECE

Phone: 703-993-1569
Email: ece@gmu.edu
Website: ece.gmu.edu

Electrical and computer engineering has transformed every single facet of our lives. The minor in electrical and computer engineering (ECE) is a broad program designed to provide non-ECE students with the foundational knowledge to build and analyze analog and digital circuits as well as signals and systems that form the foundations of any electrical device ranging from smart phones to satellites. These foundation courses enable students to then take on higher-level coursework as part of the minor electives, providing them with a deeper understanding and hands-on opportunity to build a diverse range of hardware systems.

The ECE minor is open to any student (except those pursuing the Electrical Engineering, BS or the Computer Engineering, BS degrees) and is especially conducive to those students with a strong mathematics and science background, such as a major in another engineering or science field as well as those pursuing a bachelor's in computer science. By combining knowledge from their major, students can use the basics and hands-on experiences gained from the ECE minor to design, engineer, build and innovate practical systems to solve real-world problems.

Admissions & Policies

Policies

Eight credits of coursework must be unique to the minor. For policies governing all minors, see AP5.3.4 Minors (<http://catalog.gmu.edu/policies/academic/undergraduate-policies/#ap-5-3-4>).

Requirements

Minor Requirements

Total credits: 18-21

Required Courses

Code	Title	Credits
ECE 101	Introduction to Electrical and Computer Engineering	3
ECE 201	Introduction to Signals and Systems	3
ECE 330 or ECE 285	Circuit Theory Electric Circuit Analysis I	3
ECE 301 or ECE 231 & ECE 232	Digital Electronics Digital System Design and Digital Electronics and Logic Design Lab	3-4
Total Credits		12-13

Technical Electives

Code	Title	Credits
Select at least six credits from the following list:		
ECE 286	Electric Circuit Analysis II	6-8
ECE 305	Electromagnetic Theory	

ECE 321	Continuous-Time Signals and Systems
ECE 333	Linear Electronics I
ECE 350	Embedded Systems and Hardware Interfaces
ECE 370	Robot Design
ECE 410	Applications of Discrete-Time Signal Processing
ECE 415	Power System Analysis
ECE 421	Classical Systems and Control Theory
ECE 424	Modern Control Systems Design
ECE 425	Secure RF Communications
ECE 430	Principles of Semiconductor Devices
ECE 431	Digital Circuit Design
ECE 433	Linear Electronics II
ECE 445	Computer Organization
ECE 446	Device Driver Development
ECE 447	Single-Chip Microcomputers
ECE 448	FPGA and ASIC Design with VHDL
ECE 450	Mobile Robots
ECE 460	Communication and Information Theory
ECE 462	Data and Computer Communications
ECE 463	Digital Communications Systems
ECE 465	Computer Networking Protocols
ECE 470	Introduction to Humanoid Robotics
ECE 476	Cryptography Fundamentals
ECE 499	Special Topics in Electrical and Computer Engineering

Total Credits 6-8