

WESTERN CAROLINA UNIVERSITY

B.S. ELECTRICAL ENGINEERING

COMPUTER ENGINEERING CONCENTRATION

The B.S. in Electrical Engineering (EE) with a concentration in Computer Engineering bridges hardware and software to prepare graduates for a wide range of in-demand engineering roles. The program builds on core electrical engineering topics to emphasize the design, implementation, and integration of digital components, embedded systems, and both conventional and smart digital devices. Students develop skills in systems and application programming, firmware, hardware design, real-time operating systems, and microcontrollers. Topics include distributed networks, embedded robotics, cybersecurity, machine learning, and artificial intelligence. This degree program is ABET accredited.

CAREER PATHS

Industries

- Embedded and Consumer Devices
- Cloud & Network Infrastructure
- IoT & Smart Devices
- Cybersecurity
- Digital Health
- Aerospace & Defense
- Automotive & Transportation

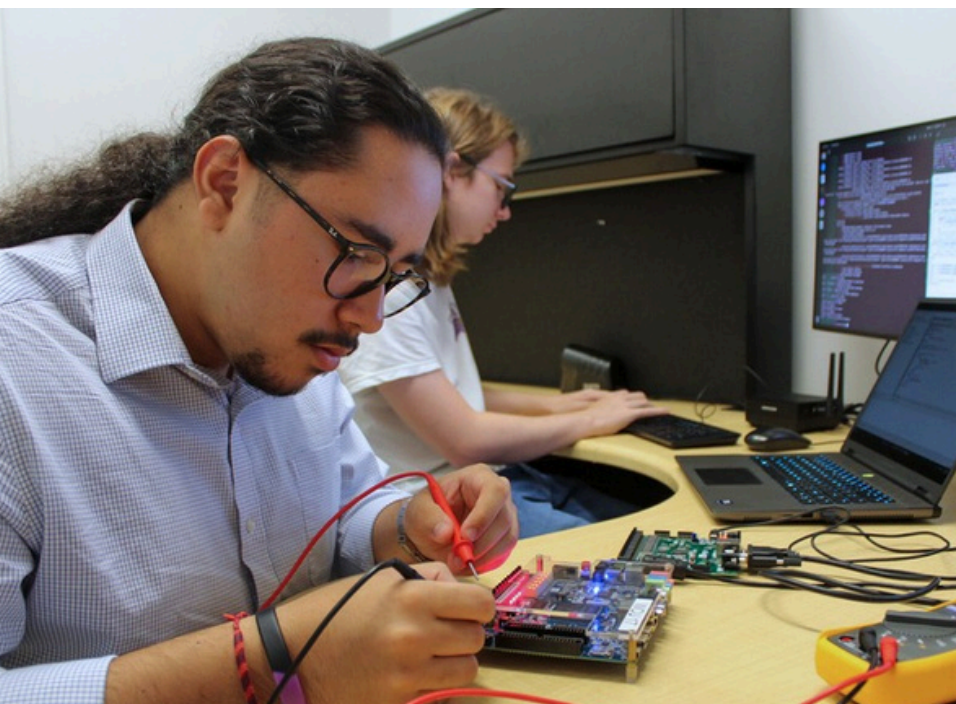
Job Titles

- Computer Hardware Engineer
- Computer Network Architect
- Software Developer
- Information Security Analyst
- Network and Computer Systems Administrators

Income Data for Typical BSEE-CPE Graduates

U.S. salary data collected from O*NET OnLine (2024)

- Early Career: \$74,956 to \$97,738
- Mid-career: \$128,040 to \$160,362



LABS

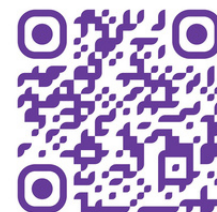
Digital Design & FPGA
Microprocessors & Embedded Systems
Networking & Distributed Systems
Cybersecurity
Robotics & Automation

SENIOR CAPSTONE PROJECT

2-semester Project
Faculty & Industry Mentors
Partnership with Industries
Industry Sponsored

THE RAPID CENTER

Applied Experiences
Research & Development



B.S. ELECTRICAL, COMPUTER ENGINEERING

WCU 8-Semester Plan - Fall 2025

YEAR 1

Fall		
Course #	Course Name	Hours
ENGR 199	Intro. Engr Prac & Principles I	3
CHEM 139	General Chemistry I (C5)	4
MATH 153	Calculus I (C2)	4
Wellness (C4)		3
Perspective		3
	Total Hours	17

Spring		
Course #	Course Name	Hours
COMM 201	Communications (C3)	3
ENGR 123	Engineering Programming	3
ENGL 101	Writing & Rhetoric (C1)	3
MATH 255	Calculus II	4
PHYS 230	General Physics I	4
	Total Hours	17

YEAR 2

Fall		
Course #	Course Name	Hours
EE 201	Network Theory I	3
EE 221	Logic Systems Design I	3
EE 211	Logic & Networks Lab	1
MATH 320	Ord. Diff. Equations	3
PHYS 231	General Physics II (lecture only)	3
CPE 223	Engineering Programming II	3
	Total Hours	16

Spring		
Course #	Course Name	Hours
EE 202	Network Theory II	3
EE 212	Instrumentation & Networks Lab	1
ENGR 200	Engr/Prac/Prin. II	3
MATH 256	Calculus III	4
CPE 233	Engineering Programming III	3
ENGL 202	Writing and Critical Inquiry (C1)	3
	Total Hours	17

YEAR 3

Fall		
Course #	Course Name	Hours
EE 311	Electronic Devices Lab	1
EE 331	Fund. Electronics & Semiconductors	3
CPE 360	Computer Hardware	3
EE 351	System Analysis I	3
MATH 370	Probability and Statistics I	3
Perspective		3
	Total Hours	16

Spring		
Course #	Course Name	Hours
ENGR 350	Engr Prac & Principles III	3
CPE 362	Embedded Linux	3
CPE 370	Distributed and Interconnected Systems	3
ENGR 311	Logic Structures for Engineering	1
Perspective		3
	Total Hours	13

YEAR 4

Fall		
Course #	Course Name	Hours
ENGR 400	Engineering Capstone I	3
CPE 470	Embedded Robotic Systems	3
EE 421	Digital System Design	3
Tech Elective		3
Perspective		3
	Total Hours	15

Spring		
Course #	Course Name	Hours
ENGR 450	Engineering Capstone II	3
CPE 474	Intelligent Machines	3
ULP		3
Tech Elective		3
Perspective		3
	Total Hours	15

Notes:

- Total for degree: 126 Credit Hours
- Minimum GPA in major: 2.20
- Upper Level Perspective (ULP): An approved ULP course is required at the 300-400 level in one of Liberal Studies Perspectives categories.
- This 8-semester plan should be used FOR REFERENCE ONLY. Students can find degree requirements via Degree Audit.



Engineering
Accreditation
Commission