

# SCHOOL OF ENGINEERING + TECHNOLOGY

## ELECTRICAL ENGINEERING, BS

### MISSION STATEMENT

The EE program produces well educated graduates that love solving complex problems, have strong study habits, and the ability to visualize abstract concepts. The graduates are employable in professional areas such as:



- Cell Phone Communications
- Analysis of Electrical Products and Systems
- Alternative Energy
- Instrumentation and Networks
- Master's and PhD Degrees in Engineering
- Computer Design

### CAREER PATHS

Program graduates work in the design, integration, and manufacturing of products in the medical, electrical power, communications, aerospace, computer, and transportation industries with job titles such as:

- Electrical Engineer
- Software Engineer
- Control and Instrumentation Engineer
- Digital Design Engineer
- System Design Engineer
- Network Engineer
- Systems Analyst

### PayScale.com

Electrical Engineer ( September 2019)

- Early Career: \$71,800
- Mid-Career: \$121,400



### THE RAPID CENTER

Applied Experiences  
Research and Development  
Support for Entrepreneurs  
Business Outreach

### LABS

Engineering Design  
Makerspace  
Motors and Controls  
Digital and Computer Electronics  
Circuit Fabrication

### SENIOR CAPSTONE PROJECT

Two Semester Project  
Faculty and Industry Mentors  
Partnership with Industries  
Industry Sponsored

FOR MORE INFORMATION: [set@wcu.edu](mailto:set@wcu.edu), [set.wcu.edu](http://set.wcu.edu), 828.227.2775



# B.S. in Electrical Engineering



Engineering  
Accreditation  
Commission

The Electrical Engineering Program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.

## Major Program Guide For B.S. in Electrical Engineering Suggested Course Sequence

- Total for Degree 126 Credit Hours

Freshman Year							
FALL				SPRING			
Course Prefix or Liberal Studies Requirement	Course Number	Course Title	Hours	Course Prefix or Liberal Studies Requirement	Course Number	Course Title	Hours
ENGR	199	Intro. Eng/Prac/Prin. I*	3	COMM	201	Communications (C3)	3
CHEM	139	General Chemistry (C5)	4	EE	200	Computer Utilization*	3
MATH	153	Calculus I* (C2)	4	ENGL	101	Composition I	3
Wellness (C4)			3	MATH	255	Calculus II*	4
Perspective			3	PHYS	230	General Physics I*	4
		<i>Semester Total</i>	<i>17</i>			<i>Semester Total</i>	<i>17</i>
Sophomore Year							
FALL				SPRING			
Course Prefix or Liberal Studies Requirement	Course Number	Course Title	Hours	Course Prefix or Liberal Studies Requirement	Course Number	Course Title	Hours
EE	201	Network Theory I*	3	EE	202	Network Theory II*	3
EE	221	Logic Systems Design I*	3	EE	212	Instrumentation & Networks Lab*	1
EE	211	Logic & Networks Lab*	1	ENGL	202	Composition II (C1)	3
ENGR	200	Eng/Prac/Prin. II*	3	MATH	256	Calculus III*	4
MATH	320	Ord. Diff. Equations*	3	PHYS	310	Modern Physics*	3
PHYS	231	General Physics II (lecture section only)*	3				
		<i>Semester Total</i>	<i>16</i>			<i>Semester Total</i>	<i>14</i>
Junior Year							
FALL				SPRING			
Course Prefix or Liberal Studies Requirement	Course Number	Course Title	Hours	Course Prefix or Liberal Studies Requirement	Course Number	Course Title	Hours
EE	311	Electronic Devices Lab*	1	EE	312	Systems & Electronics Lab*	1
EE	321	Electromagnetic Fields*	3	EE	322	Electromagnetic Waves*	3
EE	331	Fund. Electronics & Semiconductors*	3	EE	332	Electronics*	3
EE	351	System Analysis I*	3	ENGR	350	Eng/Prac/Prin. III*	3
MATH	370	Probability & Statistics I*	3	ENGR	402	System Dynamics and Control*	3
Perspective			3	Perspective			3
		<i>Semester Total</i>	<i>16</i>			<i>Semester Total</i>	<i>16</i>
Senior Year							
FALL				SPRING			
Course Prefix or Liberal Studies Requirement	Course Number	Course Title	Hours	Course Prefix or Liberal Studies Requirement	Course Number	Course Title	Hours
ENGR	400	Engineering Capstone I*	3	ENGR	450	Engineering Capstone II*	3
EE	411	Analog Communication Systems*	3	EE	413	Digital Communication Systems*	3
EE	421	Digital System Design*	3	EE	424	Digital Signal Processing*	3
Technical Elective			3	Perspective			3
Perspective			3	Upper Level Perspective			3
		<i>Semester Total</i>	<i>15</i>			<i>Semester Total</i>	<i>15</i>

\*Indicates prerequisite or co-requisite requirements.

The BSEE degree requires a grade of C or better in MATH 153, MATH 255, ENGL 101 and 202, CHEM 139, PHYS 230, EE 201, 202, 211, 221, 311, 312, 321, 322, 331, 351.

One Perspective course must be at the 300-400 level.

The technical elective is any 3 credit hour 400-level EE course not required in the Electrical Engineering Core, PHYS 322, PHYS 325, or any 3 credit hour 400-level PHYS course.

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