# BACHELOR OF SCIENCE WITH A MAJOR IN ELECTRICAL ENGINEERING, MEDICAL PREPARATION OPTION

The bachelor of science with a major in electrical engineering, medical option degree program prepares students for application to medical school. Students are prepared to work in various health sciences fields, to conduct research toward development of electronic equipment to assist in diagnosing and treating disease, or to continue as a graduate student in engineering with exceptional qualifications for biomedical engineering.

The electrical engineering program is accredited by the Engineering Accreditation Commission of ABET (http://www.abet.org).

## **Double major**

SEAS and non-SEAS students interested in pursuing the BS in electrical engineering as a double major should see Double Major under SEAS Regulations (http://bulletin.gwu.edu/engineeringapplied-science/#seasregulationstext) in this Bulletin.

Visit the program website (http://www.ece.seas.gwu.edu/ bachelor-science-electrical-engineering/) for additional information.

## REQUIREMENTS

The following requirements must be fulfilled:

131 credits as outlined below.

A minimum technical GPA of 2.20 and SEAS GPA of 2.00. A student's technical GPA is calculated using all technical engineering courses outlined in the fifth, sixth, seventh, and eighth semester of curriculum.

Code	Title	Credits
Recommended program of study		
The plan of study lists all course requirements in sequence for the degree. Students should review this information carefully and consult their advisor before changing the sequence of any courses.		
First semester		
BISC 1111	Introductory Biology: Cells and Molecule	S
CHEM 1111	General Chemistry I <sup>1</sup>	
ECE 1010	Introduction to Electrical and Computer Engineering I	
MATH 1231	Single-Variable Calculus I $^{1}$	
UW 1020	University Writing <sup>1</sup>	

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ECE 3520 Microprocessors: Software, Hardware, and Interfacing	CHEM 2151		
Interfacing	CHEM 2151 CHEM 2153	Organic Chemistry Laboratory I	
Sixth Semester	CHEM 2151 CHEM 2153 ECE 3130	Organic Chemistry Laboratory I Digital Electronics and Design	
	CHEM 2151 CHEM 2153 ECE 3130 ECE 3220	Organic Chemistry Laboratory I Digital Electronics and Design Introduction to Digital Signal Processing Microprocessors: Software, Hardware, and	

CHEM 2152	Organic Chemistry II
CHEM 2154	Organic Chemistry Laboratory II
ECE 3125	Analog Electronics Design
ECE 3310	Introduction to Electromagnetics
ECE 3410	Communications Engineering
ECE 3915W	Electrical and Computer Engineering Capstone Project Lab I
Seventh Semester	
Seventh Semester	Engineering Analysis of Neural, Muscular, and Cardiovascular Physiology
	Engineering Analysis of Neural, Muscular,
BME 3820	Engineering Analysis of Neural, Muscular, and Cardiovascular Physiology
BME 3820 ECE 4710 ECE 4920W	Engineering Analysis of Neural, Muscular, and Cardiovascular Physiology Control Systems Design Electrical and Computer

### **Eighth Semester**

ECE 4925W	Electrical and Computer Engineering Capstone Project Lab III	
PHIL 2135	Ethics in Business and the Professions	
Two humanities, social science, or non-technical electives <sup>2</sup>		

One technical elective <sup>3</sup>

<sup>1</sup>Course satisfies the University General Education Requirement (http://bulletin.gwu.edu/university-regulations/generaleducation/) in math, science, and writing.

<sup>2</sup>All electrical and computer engineering students take five courses to satisfy the ECE humanities, social science, or non-technical elective requirement. Three of these courses—one in humanities and two in social sciences-must be on the University General Education Requirement list; one course must be PHIL 2135 (or NSC 4176 for students in the NROTC Program); and one course can be in the humanities/social sciences, or a non-technical course related to public health, safety, and welfare; global cultural, social, environmental, and economic factors; or innovation, entrepreneurship, and creativity. For the last category, students can consider taking DNSC 1051, DNSC 4404, EMSE 4410, ISTM 4223 MGT 3300, MGT 3301, MGT 3302, MGT 3303, or MGT 4003. The non-technical course cannot focus on scientific/mathematical approaches or technology. All courses selected to satisfy this requirement must be taken for a minimum of 3 credits and approved by the advisor.

<sup>3</sup>Two 3-credit technical elective courses must be selected with the approval of the advisor from upper-division undergraduate (2000 to 4000 level) or graduate courses in engineering, computer science, mathematics, physical sciences, or biological sciences. Exceptions must be approved by the advisor.