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).

Bachelor of Science With a Second Major in Electrical Engineering

Any undergraduate student who is enrolled at GW may declare a second major in electrical engineering only if their primary degree is a Bachelor of Science. The student must meet the degree requirements for bachelor of science in electrical engineering, including SEAS general, major, technical electives, humanities/social science, and SEAS/technical GPA requirements. Students earning other bachelor degrees (e.g., BA, BBA, BFA) must complete a double degree (http://bulletin.gwu.edu/university-regulations/#DDegrees).

Graduation grade-point average criteria:

To satisfactorily complete a second major in electrical engineering, a student must have a minimum grade-point average of 2.2 in all technical engineering courses outlined in the fifth, sixth, seventh, and eighth semesters of the curriculum.

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.

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.

Code	Title	Credits
First semester		
BISC 1111	Introductory Biology: Cells and Molecules	
CHEM 1111	General Chemistry I [1]	
ECE 1010	Introduction to Electrical and Computer Engineering I	
MATH 1231	Single-Variable Calculus I [1]	
UW 1020	University Writing [1]	
SEAS 1001	Engineering Orientation	
Second semester		
CHEM 1112	General Chemistry II	
ECE 1020	Introduction to Electrical and Computer Engineering II	
ECE 1120	C Programming for Electrical and Computer Engineering	
MATH 1232	Single-Variable Calculus II [1]	
PHYS 1021	University Physics I [2]	
or PHYS 1025	University Physics I with Biological Applications	
Third semester		
APSC 2113	Engineering Analysis I	
ECE 1125	Data Structures and Algorithms for ECE	
ECE 2110	Circuit Theory	
ECE 2120	Engineering Seminar	
MATH 2233	Multivariable Calculus [1]	
PHYS 1022	University Physics II [1]	
or PHYS 1026	University Physics II with Biological Applications	
Fourth Semester		
BISC 1112	Introductory Biology: The Biology of Organisms	
ECE 2115	Engineering Electronics	
ECE 2140	Design of Logic Systems	

ECE 2210	Circuits, Signals, and Systems
One humanities or social sciences elective [2]	
Fifth Semester	
APSC 3115	Engineering Analysis III
CHEM 2151	Organic Chemistry I
CHEM 2153	Organic Chemistry Laboratory I
ECE 3130	Digital Electronics and Design
ECE 3220	Introduction to Digital Signal Processing
ECE 3520	Microprocessors: Software, Hardware, and Interfacing
Sixth Semester	
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	
BME 3820	Engineering Analysis of Neural, Muscular, and Cardiovascular Physiology
ECE 4710	Control Systems Design
ECE 4920W	Electrical and Computer Engineering Capstone Project Lab II
One humanities or social sciences elective [2]	
One technical elective [3]	
Eighth Semester	
ECE 4925W	Electrical and Computer Engineering Capstone Project Lab III
PHIL 2135	Ethics in Business and the Professions
Two humanities or social sciences electives [2]	
One technical elective [3]	

[1]Course satisfies the University General Education Requirement (http://bulletin.gwu.edu/university-regulations/general-education/) in math, science, and writing.

[2]All electrical and computer engineering students take five courses to satisfy the ECE humanities and social science/non-technical 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 Ethics in Business and the Professions (or NSC 4176 Leadership and Ethics 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 Introduction to Business Analytics, DNSC 4404 Essentials of Project Management, EMSE 4410 Engineering Economic Analysis, ISTM 4223 Innovation Ventures MGT 3300 Entrepreneurship, MGT 3301 Small Business Management, MGT 3302 e-Entrepreneurship, MGT 3303 Women's Entrepreneurial Leadership, or MGT 4003 Management of the Growing Entrepreneurial Venture,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.

[3]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.