

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

Mechanical engineering encompasses a vast range of industrial activities. Mechanical engineers conceive, plan, design, and direct the manufacture, distribution, and operation of complex systems. Applications include aerospace, energy conversion, computer-aided design and manufacturing, power and propulsion systems, robotics, and control systems. The bachelor of science with a major in mechanical engineering, medical preparation option degree program prepares students for application to medical school. Students are prepared to work in research and development or to pursue graduate study in the fields of biomechanics and biotechnology. The mechanical engineering (ME) program is accredited by the Engineering Accreditation Commission of ABET (<https://www.abet.org/>).

Visit the program website (<http://www.mae.seas.gwu.edu/programs-degrees/>) for additional information.

Bachelor of Sciences with a Second Major in Mechanical Engineering, Medical Preparation Option

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

Graduation grade-point average criteria:

To satisfactorily complete a second major in biomedical 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.

REQUIREMENTS

Recommended program of study

Code	Title	Credits
First semester		
BISC 1111	Introductory Biology: Cells and Molecules	
CHEM 1111	General Chemistry I ¹	
MAE 1001	Introduction to Mechanical and Aerospace Engineering	

MATH 1231	Single-Variable Calculus I ¹
SEAS 1001	Engineering Orientation
UW 1020	University Writing ¹
Second semester	
CHEM 1112	General Chemistry II ¹
MATH 1232	Single-Variable Calculus II ¹
MATH 2184	Linear Algebra I
MAE 1117	Introduction to Engineering Computations
PHYS 1021	University Physics I ¹
Third semester	
APSC 2057	Analytical Mechanics I
APSC 2113	Engineering Analysis I
BISC 1112	Introductory Biology: The Biology of Organisms
MAE 2117	Engineering Computations
MATH 2233	Multivariable Calculus ¹
PHYS 1022	University Physics II ¹
Fourth semester	
APSC 2058	Analytical Mechanics II
ECE 2110	Circuit Theory
MAE 2131	Thermodynamics
CE 2220	Introduction to the Mechanics of Solids
MAE 1004	Engineering Drawing and Computer Graphics
Fifth semester	
CHEM 2151	Organic Chemistry I ¹
CHEM 2153	Organic Chemistry Laboratory I ¹
MAE 3126	Fluid Mechanics I
MAE 3127	Fluid Mechanics Lab
APSC 3115	Engineering Analysis III
MAE 3191	Mechanical Design of Machine Elements
Humanities, social science, or non-technical elective ²	

Sixth semester

CHEM 2152	Organic Chemistry II ¹
CHEM 2154	Organic Chemistry Laboratory II ¹
MAE 3120	Methods of Engineering Experimentation
MAE 3134	Linear System Dynamics
MAE 3193	Mechanical Systems Design
MAE 3187	Heat Transfer

Seventh semester

MAE 4149	Thermal Systems Design
MAE 4182	Electromechanical Control System Design
MAE 3192	Manufacturing Processes and Systems
MAE 4151	Capstone Design Project I
MAE 3166W	Materials Science and Engineering
Humanities, social science, or non-technical elective ²	

Eighth semester

MAE 4152W	Capstone Design Project II
MAE 3167W	Mechanics of Materials Lab
Four humanities, social science, or non-technical electives ²	

¹ Course satisfies the university general education requirement in quantitative reasoning, scientific reasoning, and written communication.

² To satisfy the SEAS humanities, social science, and non-technical elective requirement, all mechanical engineering students must take one humanities course and two social science courses from the University General Education Requirement (<http://bulletin.gwu.edu/university-regulations/general-education/>); PHIL 2135, and two additional humanities, social science, or non-technical courses from the MAE Department's pre-approved list of electives. Each course selected to satisfy this requirement must be taken for at least 3 credits. NOTE: Students in the patent law concentration must take MAE 2170 in lieu of one of the additional humanities, social science, non-technical course.