

BACHELOR OF SCIENCE WITH A MAJOR IN MECHANICAL ENGINEERING (STEM)

The mechanical engineering program at GW teaches students the fundamentals in statics, dynamics, design, materials, fluid mechanics, thermodynamics, and heat transfer—knowledge that lets engineers design and build creative solutions for global challenges. Students have opportunities to explore aspects of traditional mechanical and aerospace engineering as well as emerging research in biomedical engineering and nanotechnology. Mechanical engineering students are pioneers, working on new technologies that could ultimately lead to fewer greenhouse gas emissions, while others have participated in biomechanics research to help the U.S. Olympic Swimming Team bring home more medals. Program graduates have many career options and opportunities to make a difference, including careers in the automotive, aerospace, manufacturing, power generation and transformation, and biomedical industries. The mechanical engineering (ME) program is accredited by the Accreditation Commission of ABET (<https://www.abet.org/>).

Double major

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

This is a STEM designated program.

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

ADMISSIONS

For more information on the admission process, please visit the Office of Undergraduate Admissions website (<https://undergraduate.admissions.gwu.edu/>). Applications may be submitted via the Common Application (<https://go.gwu.edu/commonapp/>).

Supporting documents not submitted online should be mailed to:
Office of Undergraduate Admissions

The George Washington University
800 21st Street NW, Suite 100
Washington DC 20052

Contact for questions:
gwadm@gwu.edu or 202-994-6040

REQUIREMENTS

Code	Title	Credits
First semester		
CHEM 1111	General Chemistry I ¹	
or CHEM 1113	General Chemistry for Engineers	

MAE 1001 Introduction to Mechanical and Aerospace Engineering

MATH 1231 Single-Variable Calculus I ¹

SEAS 1001 Engineering Orientation

UW 1020 University Writing

Humanities and social science 1 ²

Second semester

MAE 1004 Engineering Drawing and Computer Graphics

MAE 1117 Introduction to Engineering Computations

MATH 1232 Single-Variable Calculus II ¹

MATH 2184 Linear Algebra I

PHYS 1021 University Physics I ¹

Humanities or social science 2 ²

Third semester

APSC 2057 Analytical Mechanics I

APSC 2113 Engineering Analysis I

MAE 2117 Engineering Computations

MAE 3192 Manufacturing Processes and Systems

MATH 2233 Multivariable Calculus ¹

Fourth semester

APSC 2058 Analytical Mechanics II

APSC 3115 Engineering Analysis III

CE 2220 Introduction to the Mechanics of Solids

MAE 2131 Thermodynamics

PHYS 1022 University Physics II

Fifth semester

MAE 3119 Electronics and Devices for Mechanical Engineers

MAE 3126 Fluid Mechanics I

MAE 3127 Fluid Mechanics Lab

MAE 3166W Materials Science and Engineering

MAE 3191 Mechanical Design of Machine Elements

Humanities and social science 3 ²

Sixth semester	
MAE 3120	Methods of Engineering Experimentation
MAE 3134	Linear System Dynamics
MAE 3167W	Mechanics of Materials Lab
MAE 3187	Heat Transfer
MAE 3193	Mechanical Systems Design
Humanities and social science 4 ²	
Seventh semester	
MAE 4149	Thermal Systems Design
MAE 4151	Capstone Design Project I
MAE 4182	Electromechanical Control System Design
Technical elective ³	
Humanities and social science 5 ²	
Eighth semester	
MAE 4152W	Capstone Design Project II
Technical elective ³	
Technical elective ³	
Technical elective ³	
Humanities and social science 6 ²	

¹Course satisfies the University General Education Requirement (<http://bulletin.gwu.edu/university-regulations/general-education/>) in quantitative reasoning, scientific reasoning, and written communication.

²To satisfy the SEAS Humanities, Social Science, and Non-Technical Elective Requirement, all mechanical engineering students must take one humanities course and two social sciences courses from University General Education Requirement; PHIL 2135, and two additional humanities or social science or non-technical courses from the Department of Mechanical and Aerospace Engineering's preapproved list of electives. All courses selected to satisfy this requirement must be at least 3 credits. Note that students in the patent law concentration must take MAE 2170 in lieu of one of the additional humanities or social science or non-technical course.

³All technical electives must be approved by the undergraduate advisor. On a case-by-case basis, technical electives may be chosen from other departments if approved by both the undergraduate advisor and the department chair.

Code	Title	Credits
Technical electives are selected from MAE courses in the 3000, 4000, and 6000 ranges, excluding the following:		
MAE 3171	Patent Law for Engineers	
MAE 4172	Engineering Design and the Patent System	
MAE 6298	Research	
MAE 6998 & MAE 6999	MS Thesis Research and MS Thesis Research	

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

COMBINED PROGRAM

Combined program

- Dual Bachelor of Science with a major in mechanical engineering and Master of Science in the field mechanical engineering (<http://bulletin.gwu.edu/engineering-applied-science/mechanical-aerospace-engineering/combined-bs-ms-mechanical-engineering/>)