BACHELOR OF SCIENCE WITH A MAJOR IN MECHANICAL ENGINEERING, PATENT LAW 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, patent law option degree program provides a strong foundation in fundamental principles of patent law and the influences of the U.S. patent system on modern engineering design. Students in this option obtain skills and knowledge that can lead to work as a technical specialist in a patent law firm or in the patent department of an industrial employer. The option provides excellent preparation for pursuit of a law degree that may focus on intellectual property law. The mechanical engineering (ME) program is accredited by the 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, Patent Law 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/#DDegrees).

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		
CHEM 1111	General Chemistry I (or CHEM 1113) [1]	
UW 1020	University Writing [1]	
Humanities, social science, or non-technical elective [2]		
MAE 1001	Introduction to Mechanical and Aerospace Engineering	
MATH 1231	Single-Variable Calculus I [1]	
SEAS 1001	Engineering Orientation	
Second semester		
MATH 2184	Linear Algebra I	
MAE 1004	Engineering Drawing and Computer Graphics	
MAE 1117	Introduction to Engineering Computations	
MATH 1232	Single-Variable Calculus II [1]	
PHYS 1021	University Physics I [1]	
Third semester		
APSC 2057	Analytical Mechanics I	
APSC 2113	Engineering Analysis I	
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	
Humanities, social science, or non-technical elective [2]		
Fifth semester		
MAE 3126	Fluid Mechanics I (Humanities or Social Sciences elective)	
MAE 3192	Manufacturing Processes and Systems	
APSC 3115	Engineering Analysis III	
MAE 3127	Fluid Mechanics Lab	
MAE 3191	Mechanical Design of Machine Elements (Humanities or Social Sciences elective)	
MAE 3166W	Materials Science and Engineering	

Humanities, social science, or non-technical elective	
Sixth Semester	
MAE 3120	Methods of Engineering Experimentation (Sixth Semester)
MAE 3134	Linear System Dynamics (Humanities or Social Sciences elective)
MAE 3187	Heat Transfer
MAE 3193	Mechanical Systems Design
MAE 3171	Patent Law for Engineers (Humanities or social sciences elective)
MAE 3167W	Mechanics of Materials Lab
Seventh semester	
MAE 4149	Thermal Systems Design
MAE 4182	Electromechanical Control System Design (Humanities or Social Sciences elective)
MAE 4151	Capstone Design Project I
Technical elective [3]	
Humanities, social science, or non-technical elective	
Eighth semester	
MAE 4152W	Capstone Design Project II
MAE 4172	Engineering Design and the Patent System
Two humanities, social science, or non-technical electives [2]	
Technical elective [3]	

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

[2]To satisfy the SEAS humanities and social sciences requirement, all mechanical engineering students must take one (1) humanities course and two social sciences courses from the University General Education Requirement (http://bulletin.gwu.edu/university-regulations/general-education/); PHIL 2135 Ethics in Business and the Professions; and two additional humanities or social sciences 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 History and Impact of the U.S. Patent System in lieu of one of the additional humanities or social sciences or non-technical course.

[3] All 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. Technical electives are chosen from MAE courses in the 3000, 4000, and 6000 series, excluding: MAE 3171 Patent Law for Engineers , MAE 4172 Engineering Design and the Patent System, MAE 6298 Research, MAE 6998 MS Thesis Research, and MAE 6999 MS Thesis Research. Visit the program website (http://www.mae.seas.gwu.edu/programs-degrees/) for additional information.