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 medical preparation option leads to a bachelor’s degree in mechanical engineering and prepares students for application to medical school. The student is also prepared to work in research and development or to pursue graduate study in the fields of biomechanics and biotechnology.

REQUIREMENTS

Recommended program of study

First semester
- CHEM 1111 General Chemistry I *
- MAE 1001 Introduction to Mechanical and Aerospace Engineering
- MATH 1231 Single-Variable Calculus I *
- SEAS 1001 Engineering Orientation
- UW 1020 University Writing *
  Humanities or social sciences elective **

Second semester
- CHEM 1112 General Chemistry II *
- MAE 1004 Engineering Drawing and Computer Graphics
- MATH 2184 Linear Algebra I
- MATH 1232 Single-Variable Calculus II *
- PHYS 1021 University Physics I *

Third semester
- APSC 2057 Analytical Mechanics I
- APSC 2113 Engineering Analysis I
- BISC 1111 Introductory Biology: Cells and Molecules *
- MAE 2117 Engineering Computations

Fourth semester
- APSC 2058 Analytical Mechanics II
- BISC 1112 Introductory Biology: The Biology of Organisms *
- CE 2220 Introduction to the Mechanics of Solids
- CSCI 1121 Introduction to C Programming
- ECE 2110 Circuit Theory
- MAE 2131 Thermodynamics

Fifth semester
- APSC 3115 Engineering Analysis III
- CHEM 2151 Organic Chemistry I *
- CHEM 2153 Organic Chemistry Laboratory I *
- MAE 3126 Fluid Mechanics I
- MAE 3166W Materials Science and Engineering
- MAE 3191 Mechanical Design

Sixth semester
- CHEM 2152 Organic Chemistry II *
- CHEM 2154 Organic Chemistry Laboratory II *
- MAE 3120 Methods of Engineering Experimentation
- MAE 3134 Linear System Dynamics
- MAE 3193 Mechanical Systems Design
- MAE 3167W Mechanics of Materials Lab
  Humanities or social sciences elective **

Seventh semester
- MAE 3192 Manufacturing Processes and Systems
- MAE 4149 Thermal Systems Design
- MAE 4182 Electromechanical Control System Design
- MAE 4151 Mechanical Engineering Project
  Two humanities or Social sciences electives **
**Eighth semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAE 3187</td>
<td>Heat Transfer</td>
</tr>
<tr>
<td>MAE 4152W</td>
<td>Mechanical Engineering Laboratory</td>
</tr>
<tr>
<td>Technical Elective</td>
<td></td>
</tr>
</tbody>
</table>

Two humanities or social sciences electives  

*Course satisfies the university general education requirement in math, science, and writing.  
**At least two social and behavioral sciences courses must be selected from the University General Education Requirement list (http://bulletin.gwu.edu/university-regulations/general-education); the remaining course must be selected from either the University General Education Requirement list or the SEAS General Education Requirement list (http://www.seas.gwu.edu/sites/www.seas.gwu.edu/files/downloads/HSS%20Form%20Fall%202015%20Admits%201_0.pdf). At least one humanities course must be selected from the University General Education Requirement list (http://bulletin.gwu.edu/university-regulations/general-education); the remaining courses must be selected from either the University General Education Requirement list or the SEAS General Education Requirement list. (http://www.seas.gwu.edu/sites/www.seas.gwu.edu/files/downloads/HSS%20Form%20Fall%202015%20Admits%201_0.pdf)