MECHANICAL ENGINEERING, CO-OP OPTION, BS

Bachelor of Science in Mechanical Engineering with Co-op (G60005BS)

This option of the undergraduate program in Mechanical Engineering includes a cooperative education component.

Mechanical engineers design and analyze physical systems and are employed in a variety of industries in different capacities. Mechanical engineers play important roles in many types of companies, including automotive, petroleum, energy generation and conversion, aerospace, tire, consulting, chemical, electronic, and manufacturing.

The Mechanical Engineering curriculum at The University of Akron is designed to give the student knowledge of fundamental principles of the(7) an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Requirements for Admission

All students who meet the minimum requirements for admittance into The University of Akron and intend to major in engineering or engineering technology are accepted into the College of Engineering and Polymer Science and welcome to begin study towards their intended major. Students must show success in key classes early in the program curriculum before they gain full admission to the program and approval to take classes in the third year of the curriculum and beyond.

Accelerated BS/MS program

The department offers B.S. Mechanical Engineering students at The University of Akron a BS/MS program that allows them to earn the Master of Science in Mechanical Engineering with one additional year of study. Applications are accepted in the Spring before the senior year.

The following information has official approval of the Department of Mechanical Engineering and The College of Engineering and Polymer Science, but is intended only as a supplemental guide. Official degree requirements are established at the time of transfer and admission to the degree-granting college. Students should refer to the Degree Progress Report (DPR) which is definitive for graduation requirements. Completion of this degree within the identified time frame below is contingent upon many factors, including but not limited to: class availability, total number of required credits, work schedule, finances, family, course drops/withdrawals, successfully passing courses, prerequisites, among others. The transfer process is completed through an appointment with your academic advisor.

1st Year

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM:151 Principles of Chemistry I ¹</td>
<td>3</td>
</tr>
<tr>
<td>CHEM:152 Principles of Chemistry I Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>ENGL:111 English Composition I ¹,²,³</td>
<td>3</td>
</tr>
<tr>
<td>MATH:221 Analytic Geometry-Calculus I ¹</td>
<td>4</td>
</tr>
<tr>
<td>MECE:165 Tools for Mechanical Engineering</td>
<td>3</td>
</tr>
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<td></td>
<td>14</td>
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<table>
<thead>
<tr>
<th>Spring Semester</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM:153 Principles of Chemistry II ¹</td>
<td>3</td>
</tr>
<tr>
<td>MATH:222 Analytic Geometry-Calculus II ¹</td>
<td>4</td>
</tr>
</tbody>
</table>

¹Prerequisite for ENG/ME 201
²Prerequisite for MATH 141
³Prerequisite for MATH 241
# Mechanical Engineering, Co-op Option, BS

## 2nd Year
### Fall Semester
- **ECON:244** Introduction to Economic Analysis 3
- **MATH:223** Analytic Geometry-Calculus III 4
- **PHYS:291** Elementary Classical Physics 4
- **CIVE:201** Statics 3
  - General Education or Honors Distribution 3

### Spring Semester
- **MATH:335** Introduction to Ordinary Differential Equations 3
- **PHYS:292** Elementary Classical Physics II 4
- **CIVE:202** Introduction to Mechanics of Solids 3
- **MECE:203** Dynamics 3
  - General Education or Honors Distribution 3

### Summer Semester
- **GNEN:300** Cooperative Education Work Period (Possible) 0

### Hours
- 17

## 3rd Year
### Fall Semester
- **STAT:401** Probability and Statistics for Engineers 2
- **MECE:300** Thermodynamics I 3
- **MECE:310** Fluid Mechanics I 2
- **MECE:321** Kinematics of Machines 2
- **MECE:336** Analysis of Mechanical Components 3
- **MECE:360** Engineering Analysis II 2

### Spring Semester
- **GNEN:301** Cooperative Education Work Period 0

### Summer Semester
- **MECE:311** Fluid Mechanics II 3
- **MECE:380** Introduction to Materials Science and Engineering 2
- **MECE:431** Fundamentals of Mechanical Vibrations 3

### Hours
- 14

## 4th Year
### Fall Semester
- **GNEN:302** Cooperative Education Work Period 0

### Spring Semester
- **ELEN:307** Basic Electrical Engineering 4
- **MECE:301** Thermodynamics II 2
- **MECE:315** Heat Transfer 3
- **MECE:337** Design of Mechanical Components 3
- **MECE:340** Systems Dynamics & Response 3
- **MECE:483** Measurements Laboratory 2

### Summer Semester
- **GNEN:403** Cooperative Education Work Period 0

## 5th Year
### Fall Semester
- **MECE:400** Thermal System Components 3
- **MECE:402** Senior Seminar 1
- **MECE:441** Control Systems Design 3
- **MECE:460** Concepts of Design 3
- **MECE:461** ME Senior Design Project I (Non Honors Track) 6
  - **MECE:484** Mechanical Engineering Laboratory 2
  - Mechanical Engineering Elective 3

### Spring Semester
- **MECE:471** ME Senior Design Project II 7
  - **MECE:472** Mechanical Engineering Elective 5
  - **MECE:473** Mechanical Engineering Elective 5
  - **MECE:474** General Education Course (Non Honors Track) 3
  - **MECE:475** General Education Course (Non Honors Track) 3
  - **MECE:476** General Electives 4

### Hours
- 17

### Total Hours
- 136

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1. Honors sections may be available; check the schedule of classes.
2. The Mechanical Engineering Department recommends that English Composition I be used to satisfy writing course requirement but other choices are available. See the General Education Program for details.
3. Check General Education Program or Honors Distribution to find courses that satisfy the second writing course requirement.
4. Credit hours shown for General Education or Honors Distribution are general guidelines only. These courses should be chosen in accordance with the appropriate General Education curriculum guide (for non-honors students) or Honors Distribution (for honors students). Honors students must also ensure that their course selections meet additional requirements not shown on this curriculum guide.
5. Mechanical Engineering Electives must include three credits Mechanical Engineering design elective, three credits Technical elective, and three credits Mechanical Engineering technical elective.
6. Students following the Honors Track will complete part of the Honors Distribution instead of MECE:461.
7. Students following the Honors Track will complete the 4-credit Honors Project instead of MECE:471.
8. Students following the Honors Track will complete part of the Honors Distribution instead of General Education. Course credits hours vary between General Education and Honors Distribution.