# PROGRAM OVERVIEW

Mechanical engineering offers interesting and challenging career opportunities in research, design development, manufacturing, testing and marketing for either private or government. As a mechanical engineer, you may work on products such as engines, transmissions, compressors, pumps, computer disk drives, CAD/CAE software, oil field drilling rigs, missiles, space satellites, earth moving equipment, container manufacturing machines and medical equipment.

Bachelor of Science (BS) in mechanical engineering curriculum begins with a strong emphasis on mathematics, physics and chemistry. It continues with a concentration in engineering sciences, including solid and fluid mechanics; thermodynamics, heat and mass transport; materials; and systems analysis and control. It concludes with laboratory and design courses which demonstrate the ways in which scientific knowledge is applied in the design and development of useful devices and manufacturing processes.

# ACADEMIC ADVISING

Academic Advising is mandatory for all ME/BS and pre-engineering students. The College Advising hold is placed every semester on each undergraduate student’s account despite the GPA. This hold is removed after the advising appointment. The academic advisor might change every semester depending on your year of study and academic standing. To schedule please email mechanical@ucdenver.edu.

**Students admitted to the College of Engineering, Design and Computing (CEDC) who have declared a major are required to meet with an advisor in their specific department and should contact that department to schedule an appointment.**

**Students admitted to the College of Engineering, Design and Computing (CEDC) who have not declared a major are required to meet with the CEDC advisor.**

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**Mechanical Engineering**
mechanical@ucdenver.edu
Visit the department website [here](#)
North Classroom 2024
303-315-7500

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**College of Engineering, Design and Computing**
University of Colorado Denver
303-315-7170
f 303 315 7173
engineering@ucdenver.edu

# GENERAL GRADUATION REQUIREMENTS & POLICIES

All CU Denver CEDC MECH students are required to complete the following minimum general graduation requirements:

1. Complete a minimum of 128 credit hours
2. Achieve a minimum 2.0 CU cumulative grade point average (GPA) and 2.0 minimum GPA in engineering coursework
3. Complete all college and major requirements
4. Residency: complete a minimum of 30 CEDC hours as a declared CEDC student in good standing at CU Denver
5. Terminal Residency: complete at least the final two semesters as an enrolled CEDC student

**PROGRAM REQUIREMENTS & POLICIES**

Students are responsible for meeting with the faculty advisor in their department to confirm major requirements. Students completing the Mechanical Engineering B.S. Degree are required to complete the following minimum program requirements:

1. Complete 24 semester hours of CU Denver Core Curriculum coursework.
2. Complete a minimum of 31 semester hours of required mathematics and basic science courses with a grade of C- (2.0) or better in each course.
3. Complete a minimum of 73 semester hours of MECH core curriculum coursework, including 9 credit hours of elective coursework in an approved mechanical engineering track. All prerequisite courses must be completed with a grade of C- or better.

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### Courses

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required CU Denver Core Curriculum Coursework</td>
<td>24</td>
<td>CU Denver Core Curriculum</td>
</tr>
<tr>
<td>Required Mathematics and Basic Sciences Courses</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>MATH1401 Calculus I</td>
<td>4</td>
<td></td>
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<tr>
<td>MATH2411 Calculus II</td>
<td>4</td>
<td>*Prerequisite: Placement; fulfills CORE Mathematics</td>
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<tr>
<td>MATH2421 Calculus III</td>
<td>4</td>
<td>*Prerequisite: C- or better in MATH1401</td>
</tr>
<tr>
<td>MATH3195 Linear Algebra and Differential Equations</td>
<td>4</td>
<td>*Prerequisite: C- or better in MATH2411</td>
</tr>
<tr>
<td>ENGR1130 Engineering Chemistry with lab</td>
<td>5</td>
<td>*Prerequisite: High School chemistry or CHEM 1000 recommended</td>
</tr>
<tr>
<td>PHYS2311 &amp; 2321 General Physics I with lab</td>
<td>5</td>
<td>*Prerequisite: PHYS 2311 and *Co-Prerequisite: MATH 2411</td>
</tr>
<tr>
<td>PHYS2331 &amp; 2341 General Physics II with lab</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Required Mechanical Engineering Courses</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>MECH1025 Mechanical Engineering Graphics and CAD</td>
<td>3</td>
<td>*Prerequisite: High School Geometry and Algebra</td>
</tr>
<tr>
<td>MECH1045 Manufacturing Processes Design</td>
<td>3</td>
<td>*Prerequisite: MECH 1025</td>
</tr>
<tr>
<td>MECH1100 Fundamentals of Computational Innovation</td>
<td>3</td>
<td>*Prerequisite: High School Geometry and Algebra</td>
</tr>
<tr>
<td>MECH1200 Fundamentals of Engineering Design Innovation</td>
<td>3</td>
<td>*Prerequisite: High School Geometry and Algebra</td>
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</tbody>
</table>

**Required Mechanical Engineering Courses (Continued)**

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<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MECH2023 Statics</td>
<td>3</td>
<td>*Prerequisites: PHYS 2311 *Co-Prerequisite: MATH 2411</td>
</tr>
</tbody>
</table>
The following academic plan is an example of sample mechanics engineering track electives. A minimum of three semester hours must be upper-division (3000- or 4000-level) and taught within the Department of Mechanical Engineering.

**Year One**
- **Semester 1**
  - ENGR 1100: Fundamentals of Engineering Design Innovation (3)
- **Semester 2**
  - ENGR 1200: Manufacturing (3)

**Year Two**
- **Semester 3**
  - ENGL 1020: Core Composition I (3)
- **Semester 4**
  - ENGR 1130: Engineering General Chemistry (3)

**Year Three**
- **Semester 5**
  - MATH 1401: Calculus I (4)
- **Semester 6**
  - PHYS 2331/PHYS 2341: General Physics II w/Lab (5)

**Year Four**
- **Semester 7**
  - ENGR 1100: Fundamentals of Computational Innovation (3)
- **Semester 8**
  - MECH 3012: Thermodynamics I (3)

Check individual courses for prerequisites.