MECHANICAL ENGINEERING DEGREE

Students must also complete the Undergraduate Registration Requirement (https://catalogs.northwestern.edu/undergraduate/requirements-policies/undergraduate-registration-requirement) and the degree requirements of their home school.

Course Requirements (48 units)

Core Courses (32 units)

- 4 mathematics courses (https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext)
- 4 engineering analysis and computer proficiency courses (https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext)
- 4 units of basic science:
  - PHYSICS 135-2 & PHYSICS 135-3 General Physics
  - PHYSICS 136-2 & PHYSICS 136-3 General Physics Laboratory
  - CHEM 131-0 & CHEM 141-0 General Chemistry 1 and General Chemistry Laboratory 1
    - or CHEM 151-0 & CHEM 161-0 Accelerated General Chemistry 1 and Accelerated General Chemistry Laboratory 1
    - or CHEM 171-0 & CHEM 181-0 Advanced General Inorganic Chemistry and Advanced General Inorganic Chemistry Laboratory

- 3 design and communications courses (https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext)

- 5 basic engineering courses:
  - MECH_ENG 233-0 Electronics Design
  - CIV_ENV 216-0 Mechanics of Materials I
  - MECH_ENG 241-0 Fluid Mechanics I
  - MAT_SCI 201-0 Introduction to Materials
  - MECH_ENG 222-0 Thermodynamics & Statistical Mechanics - I

- 7 social sciences/humanities courses (https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext)

- 5 unrestricted electives (https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext)

Major Program (16 units)

- 7 required courses:
  - MECH_ENG 202-0 Mechanics II
  - MECH_ENG 224-0 Experimental Engineering
  - MECH_ENG 240-0 Intro to Mechanical Design & Manufacatrng
  - MECH_ENG 315-0 Theory of Machines - Design of Elements
  - MECH_ENG 340-1 Comp Integ Manufacturing: Manufacturing Processes
  - MECH_ENG 377-0 Heat Transfer I
  - MECH_ENG 390-0 Intro to Dynamic Systems

- 2 capstone courses:
  - MECH_ENG 398-1 & MECH_ENG 398-2 Engineering Design - Senior Capstone, Quarter 1 and Engineering Design II - Senior Capstone, Quarter 2 (taken sequentially and counting toward the final 12 units taken before graduation)

- 3 advanced study courses, including 1 from each group:
  - Dynamics/controls (p. 1)
  - Mechanics (p. 1)
  - Thermofluid science (p. 1)

Electives Requirements

- 4 electives:
  - All technical electives must be 300 level or above.
  - 1 technical elective must be a mathematics or basic science course.
  - 2 technical electives must be mechanical engineering courses.
  - 1 technical elective may be in mathematics, basic science, or engineering
  - Students are encouraged to concentrate electives in areas of interest. A list of nine areas of concentration, including appropriate courses and descriptions, is available on the department website.
  - No more than 2 units of MECH_ENG 399-0 Projects are allowed.
  - DSGN 360-0 Design Competition carries 1 unit of credit only if taken over 2 consecutive quarters. If repeated for credit, only 1 unit may be used as a technical elective, and no more than 2 units total may count toward the degree.
  - DSGN 245-0 Introduction to Computer Aided Design I: NX may not be counted toward the degree even as an unrestricted elective.

Advanced Study Courses

Dynamics/Controls

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>MECH_ENG 314-0</td>
<td>Machine Dynamics</td>
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<tr>
<td>MECH_ENG 363-0</td>
<td>Mechanical Vibrations</td>
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<tr>
<td>EECS 360-0</td>
<td>Introduction to Feedback Systems</td>
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</tbody>
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Mechanics

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>MECH_ENG 327-0</td>
<td>Finite Elements for Stress Analysis</td>
</tr>
<tr>
<td>MECH_ENG 362-0</td>
<td>Stress Analysis</td>
</tr>
</tbody>
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Thermofluid Science

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<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>MECH_ENG 322-0</td>
<td>Thermodynamics &amp; Statistical Mechanics - II</td>
</tr>
<tr>
<td>MECH_ENG 373-0</td>
<td>Engineering Fluid Mechanics</td>
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