# Mechanical Engineering

## Optional Course Tracks for Mechanical Engineering

The Mechanical Engineering curriculum covers foundational concepts in a number of areas, ranging from dynamics and aerodynamics to computer-aided analysis for design to computational solutions to engineering problems. Through the first several semesters, students will gain exposure to foundational concepts in Aerospace and Mechanical Engineering.

Students following the standard program will have the opportunity to take more technical and AME Core electives, while students pursuing one of the following specialized tracks will take specific courses relative to the specialization.

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**Mathematics (16 units)**
- MATH 120: Calculus I
- MATH 126 or MATH 129: Calculus II
- MATH 224: Mathematics of Phys. and Engr.

**Physics (12 units)**
- PHYS 111L: Mechanics and Thermodynamics
- PHYS 113L: Electricity and Magnetism
- PHYS 115L: Optics and Modern Physics

**Chemistry/Materials Science (4 units)**
- CHEM 105A: General Chemistry
- MASC 110L: Materials Science

**General Education (32 units)**
- GE A: The Arts (1 course)*
- GE B: Humanities Inquiry (2 courses)
- GE C: Social Analysis (2 courses)
- GE D: Life Sciences (1 course)*
- GE E: Physical Sciences (1 course)*
- GE F: Quantitative Reasoning (1 course)*
- GE G: Humanistic Inquiry (2 courses)*
- GESM: General Education Seminar (1 course)

**Writing (8 units)**
- WRTG 150: Writing & Critical Reasoning
- WRTG 340: Advanced Writing

**Engineering (66 units)**
- AME 101: Statics
- AME 204: Dynamics
- AME 308: Comp. Aided Analysis for Design
- AME 309: Fluid Dynamics
- AME 310: Engineering Thermodynamics I
- AME 311L: Heat Transfer
- AME 314L: Mecanophysics Laboratory I
- AME 315L: Mecanophysics Laboratory II
- AME 320: Senior Projects Laboratory
- AME 401: Engineering Freshman Academy
- ENGR 102: Introduction to MATLAB
- MASC 310: Mechanical Behavior of Materials
- MATH 226 or MATH 229
- MATH 245: Mathematics of Phys. and Engr.
- PHYS 151L: Mechanics and Thermodynamics
- PHYS 152L: Electricity and Magnetism
- ENGR 102: Introduction to MATLAB

**Special Notes**
Courses with the * symbol may be satisfied with AP, IB or A-Level exams. See page 16 for more information.

**GE: Engineering students are encouraged to satisfy GE 6 and GE 8 with a course that also satisfies a Core Literacy. GE 6 may be satisfied by AP/IB. Additionally, your GESM course should be taken in categories A, B, C, or D only. See page 15 for more information and consult your academic advisor to explore optional elective courses.**

**Optional Electives:** Consult with your academic advisor to explore optional elective courses. These courses are not required.

**AME Core:** Any upper-division AME course not already required.

**AME Capstone:** AME 409, 415, 443, 450 or 463

**AME Design Elective:** AME 408, 430 or any special topic design course.

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## First Year

### Fall
- GESM (GE B)
- AME 101L
- MATH 120

### Spring
- WRTG 150
- GE C
- PHYS 151L

### Second Year
- Fall
- GE D*
- AME 301
- MATH 226 or MATH 229

### Spring
- WRTG 340
- GE B
- MATH 245

### Third Year
- Fall
- AME 401
- AME 309
- AME Design Elective

### Spring
- GE C
- AME 415
- AME Design Elective

### Fourth Year
- Fall
- GESM (GE B)
- MATH 224
- MATH 245

### Spring
- WRTG 340
- GE B
- MATH 226

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## Second Year

### Fall
- GESM (GE B)
- AME 101L
- MATH 120

### Spring
- WRTG 150
- GE C
- PHYS 151L

### Third Year
- Fall
- GE D*
- AME 301
- MATH 226 or MATH 229

### Spring
- WRTG 340
- GE B
- MATH 245

### Fourth Year
- Fall
- AME 401
- AME 309
- AME Design Elective

### Spring
- GE C
- AME 415
- AME Design Elective

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## Third Year

### Fall
- GESM (GE B)
- MATH 224
- MATH 245

### Spring
- WRTG 340
- GE B
- MATH 226

### Fourth Year
- Fall
- GESM (GE B)
- MATH 224
- MATH 245

### Spring
- WRTG 340
- GE B
- MATH 226

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## Fourth Year

### Fall
- GESM (GE B)
- MATH 224
- MATH 245

### Spring
- WRTG 340
- GE B
- MATH 226

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## Computational

### Fall
- ITP 161
- GE C

### Spring
- AME 431
- MATH 245

### Dynamics & Controls

### Fall
- AME 404
- AME 431
- MATH 245

### Spring
- AME 403
- MATH 245

### Thermo & Fluids

### Fall
- AME 404
- AME 431
- MATH 245

### Spring
- AME 403
- MATH 245