

## MECHANICAL ENGINEERING (COURSE 2)

Department of Mechanical Engineering (<http://catalog.mit.edu/schools/engineering/mechanical-engineering/#undergraduatetext>)

### Bachelor of Science in Mechanical Engineering

#### General Institute Requirements (GIRs)

The General Institute Requirements include a Communication Requirement that is integrated into both the HASS Requirement and the requirements of each major; see details below.

| Summary of Subject Requirements   | Subjects  |
|---|-----------|
| Science Requirement   | 6         |
| Humanities, Arts, and Social Sciences (HASS) Requirement; at least two of these subjects must be designated as communication-intensive (CI-H) to fulfill the Communication Requirement. | 8         |
| Restricted Electives in Science and Technology (REST) Requirement [can be satisfied by 2.001 and 18.03 in the Departmental Program]   | 2         |
| Laboratory Requirement (12 units) [can be satisfied by 2.671 in the Departmental Program]   | 1         |
| <b>Total GIR Subjects Required for SB Degree</b>  | <b>17</b> |

#### Physical Education Requirement

Swimming requirement, plus four physical education courses for eight points.

#### Departmental Program

Choose at least two subjects in the major that are designated as communication-intensive (CI-M) to fulfill the Communication Requirement.

| Required Core Subjects   | Units |
|--|-------|
| 2.001 Mechanics and Materials I  | 12    |
| 2.002 Mechanics and Materials II   | 12    |
| 2.003]] Dynamics and Control I   | 12    |
| 2.004 Dynamics and Control II  | 12    |
| 2.005 Thermal-Fluids Engineering I   | 12    |
| 2.006 Thermal-Fluids Engineering II  | 12    |
| 2.007 Design and Manufacturing I<br>or 2.017]] Design of Electromechanical Robotic Systems | 12    |
| 2.008 Design and Manufacturing II  | 12    |
| 2.009 The Product Engineering Process (CI-M) <sup>1</sup>                                  | 12    |
| 2.086 Numerical Computation for Mechanical Engineers                                       | 12    |
| 2.670 Mechanical Engineering Tools <sup>2</sup>  | 3     |

|  |    |
|--|----|
| 2.671 Measurement and Instrumentation (CI-M) | 12 |
| 18.03 Differential Equations                 | 12 |
| 2.THU Undergraduate Thesis <sup>3</sup>      | 6  |

#### Restricted Electives

|  |  |    |
|--|--|----|
| <i>Select two of the following:</i> <sup>2</sup>     |  | 24 |
| 2.016 Hydrodynamics                                  |  |    |
| 2.017]] Design of Electromechanical Robotic Systems  |  |    |
| 2.019 Design of Ocean Systems (CI-M)                 |  |    |
| 2.050]] Nonlinear Dynamics: Chaos                    |  |    |
| 2.092 Finite Element Analysis of Solids and Fluids I |  |    |
| 2.12 Introduction to Robotics                        |  |    |
| 2.14 Analysis and Design of Feedback Control Systems |  |    |
| 2.184 Biomechanics and Neural Control of Movement    |  |    |
| 2.370 Fundamentals of Nanoengineering                |  |    |
| 2.51 Intermediate Heat and Mass Transfer             |  |    |
| 2.60]] Fundamentals of Advanced Energy Conversion    |  |    |
| 2.650]] Introduction to Sustainable Energy           |  |    |
| 2.71 Optics  |  |    |
| 2.72 Elements of Mechanical Design                   |  |    |
| 2.797]] Molecular, Cellular, and Tissue Biomechanics |  |    |
| 2.813 Energy, Materials, and Manufacturing           |  |    |
| 2.96 Management in Engineering                       |  |    |

|   |            |
|---|------------|
| <b>Units in Major</b>                                     | <b>177</b> |
| <b>Unrestricted Electives</b> <sup>4</sup>                | <b>48</b>  |
| Units in Major That Also Satisfy the GIRs                 | (36)       |
| <b>Total Units Beyond the GIRs Required for SB Degree</b> | <b>189</b> |

The units for any subject that counts as one of the 17 GIR subjects cannot also be counted as units required beyond the GIRs.

<sup>1</sup> Students may fulfill this requirement by completing an alternative Course 2 CI-M subject (e.g., 2.013, 2.750]], or 2.760). No substitutions are allowed for 2.671.

<sup>2</sup> Consult the MechE Undergraduate Office, Room 1-110, regarding substitutions.

<sup>3</sup> To encourage more substantial research, design, or independent study, the department permits up to 15 units of 2.THU credit, subject to approval of the student's thesis advisor.

<sup>4</sup> The department suggests that students select a basic electronics subject (e.g., 2.678, 6.002, or 22.071) as early as possible in their program.