# B.S. in Mechanical Engineering and Minor in Materials Science & Engr Plan of Study

<table>
<thead>
<tr>
<th>Year</th>
<th>Fall</th>
<th>Spring</th>
<th>Summer/ J-Term</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>ENGR 150 Intro to Engineering</td>
<td>MATH 114 Calculus II</td>
<td>THEO 101 The Christian Theological Tradition</td>
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<td></td>
<td>MATH 113 Calculus I</td>
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<td></td>
<td>ENGR 171 Engineering Graphics and Design</td>
<td>CHEM 109 General Chemistry for Engineers (LAB)</td>
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<td></td>
<td>ENGL 121 Critical Thinking: Literature &amp; Writing</td>
<td>PHYS 211 Classical Physics I</td>
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<td></td>
<td>Foreign Language 111*</td>
<td>Foreign Language 112*</td>
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<td>2</td>
<td>ENGR 220 Statics</td>
<td>ENGR 221 Mechanics of Materials (LAB)</td>
<td>HIST 1XX</td>
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<td>ENGR 361 Engineering Materials (LAB)</td>
<td>MATH 200 Multi-Variable Calculus</td>
<td>Materials Elective</td>
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<td>PHYS 212 Classical Physics II</td>
<td>CISC 130 Introduction to Programming and Problem Solving</td>
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<td>Foreign Language 211*</td>
<td>ENGL 20X Texts in Conversation</td>
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<td>3</td>
<td>ENGR 255 Fabrication Lab***</td>
<td>ENGR 371 Manufacturing Processes &amp; Stat Control</td>
<td>PHIL 115 Philosophy of the Human Person</td>
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<td>ENGR 320 Machine Design &amp; Synthesis (LAB)</td>
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<td>ENGR 381 Thermodynamics (LAB)</td>
<td>ENGR 350 Introduction to Electronics (LAB)</td>
<td>IDSC 365 Materials Sci and Engr Practicum</td>
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<td>MATH 210 Introduction to Differential Equations and</td>
<td>ENGR 383 Fluid Mechanics (LAB)</td>
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<td>THEO 2XX or 3XX**</td>
<td>Fine Arts Elective**</td>
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<tr>
<td>4</td>
<td>ENGR 480 Engineering Design Clinic I</td>
<td>ENGR 481 Engineering Design Clinic II</td>
<td>Social Sciences Elective **</td>
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<td>ENGR 410 Control Systems &amp; Automation (LAB)</td>
<td>ENGR 384 Heat Transfer (LAB)</td>
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<td>ENGR 322 Dynamics (LAB)</td>
<td>ENGR XXX Engineering/Materials Elective</td>
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<td>PHIL 214 Introductory Ethics</td>
<td>THEO 4XX</td>
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* May place out of one or more semesters if proficient at 3<sup>rd</sup> Level  
** May satisfy human diversity requirement  
*** Lab skills must be retained for ENGR 320. Recommended to be taken in semester immediately preceding ENGR 320 or (with instructor permission) in first half of semester concurrent with ENGR 320. May be taken in earlier semesters if student maintains proficiency with lab shop skills for ENGR 320.

⇒⇒ denotes that the two courses can be interchanged.
Complete Course Listing:

**Engineering Courses:**
- ENGR 150 – Introduction to Engineering (1 credit)
- ENGR 155 – Fabrication Lab (0 credits)
- ENGR 171 – Engineering Graphics and Design (4 credits)
- ENGR 220 – Statics (4 credits)
- ENGR 221 – Mechanics of Materials (4 credits)
- ENGR 320 – Machine Design and Synthesis (4 credits)
- ENGR 322 – Dynamics (4 credits)
- ENGR 350 – Introduction to Electronics (4 credits)
- ENGR 361* – Engineering Materials (4 credits)
- ENGR 371 – Manufacturing Processes and Statistical Control (4 credits)
- ENGR 381* – Thermodynamics (4 credits)
- ENGR 383 – Fluid Mechanics (4 credits)
- ENGR 384 – Heat Transfer (4 credits)
- ENGR 410 – Control Systems and Automation (4 credits)
- ENGR 480 – Engineering Design Clinic I (4 credits)
- ENGR 481 – Engineering Design Clinic II (4 credits)
- Technical Elective* - (4 credits)

**61 Engineering Credits**

**Allied Requirements:**
- MATH 113 – Calculus I (4 credits)
- MATH 114 – Calculus II (4 credits)
- MATH 200 – Multi-Variable Calculus (4 credits)
- MATH 210 – Introduction to Differential Equations and Systems (4 credits)
- PHYS 211* – Classical Physics I (4 credits)
- PHYS 212* – Classical Physics II (4 credits)
- CHEM 109 – General Chemistry for Engineers (4 credits)
- CISC 130 – Introduction to Programming and Problem Solving in the Sciences (4 credits)

**32 Allied Requirement Credits**

**MSE Minor Requirements:**
- Materials Electives (8 credits)
- IDSC 365 – Materials Science and Engineering Practicum (0 credits)

* = Course fulfills an MSE requirement

**Core Curriculum**
- Three courses in foreign language (12 credits)
- Two courses in English (8 credits)
- Three courses in Theology** (12 credits)
- Two courses in Philosophy (8 credits)
- One course in the Social Sciences** (4 credits)
- One Fine Arts course** (4 credits)
- One History course (4 credits)

**52 Core Curriculum Credits**

Total Credit Count: 153 (61 engineering credits + 92 non-engineering credits)