# Materials Science & Engineering B.S. Major (Engineering Calculus)

<table>
<thead>
<tr>
<th>Pre-Major Status</th>
<th>Major Status</th>
</tr>
</thead>
</table>

## First Year
- **Fall**
  - CHEM 1210 Chemistry I (4 credits)
  - CHEM 1215 Chem Lab I (1 credit)
  - MATH 1310 Eng Calc I (4 credits)
  - MSE 1800 MSE I (1 credit)
  - WRTG 2010 Intro Writing (3 credits)
  - LEAP 1501 Eng LEAP I BF or PHIL (3500, 3520, 3530, 4540) (3 credits)

- **Spring**
  - CHEM 1220 Chemistry II (4 credits)
  - CHEM 1225 Chem Lab II (1 credit)
  - MATH 1320 Eng Calc II (4 credits)
  - MSE 1801 MSE II (1 credit)
  - Gen Ed. AI (3 credits)
  - LEAP 1500 Eng LEAP II HF & DV or PHIL (3500, 3520, 3530, 4540) (3 credits)

## Second Year
- **Fall**
  - CHEM 2110 Org Chem (4 credits)
  - ME EN 2010 Statics (3 credits)
  - PHYS 2210 Physics I (4 credits)
  - CS 1001 MATLAB (1.5 credits)

- **Spring**
  - CHEM 2115 Chem Lab II (1 credit)
  - MATH 2250 ODEs/Lin Alg (4 credits)
  - PHYS 2220 Physics II (4 credits)
  - MSE 3410 Intro Polymers (3 credits)
  - Gen Ed. DV (3 credits)

## Third Year
- **Fall**
  - CHEM 2310 Org Chem (4 credits)
  - MSE 3061 Transport (3 credits)
  - PHYS 2221 Thermodynamics (4 credits)
  - MSE 3410 Intro Polymers (3 credits)

- **Spring**
  - CHEM 2315 Chem Lab II (1 credit)
  - MATH 3140 PDEs (4 credits)
  - MSE 3032 Thermo (4 credits)
  - Gen Ed. IR (3 credits)

## Fourth Year
- **Fall**
  - MSE 3010 Mtls Processing (3 credits)
  - MSE 3011 Mtls Character (4 credits)
  - Gen Ed. (FF / BF / HF) (3 credits)

- **Spring**
  - MSE 3060 Transport (3 credits)
  - MSE 3310 Intro Ceramics (3 credits)
  - Gen Ed. DV (FF / BF / HF) (3 credits)

## Key
- Prerequisites Enforced
- Recommended co-requisites

## Major Requirements
- No grade below C allowed
- 2.3 GPA is required

Updated: Nov. 2018
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Pre-req</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSE 3011</td>
<td>Structural Analysis of Materials</td>
<td>4</td>
<td>MSE 2010, MSE 3061, MATH 3140, CHEM 2310, PHYS 2220, CS 1001, ME EN 2010</td>
</tr>
<tr>
<td>MSE 3010</td>
<td>Materials Processing</td>
<td>3</td>
<td>MSE 2010, MATH 1320, CHEM 2310, PHYS 2220, CS 1001, ME EN 2010</td>
</tr>
<tr>
<td>MSE 3100</td>
<td>Intro to Ceramics</td>
<td>3</td>
<td>MSE 2010, MATH 1310, CHEM 1210, CHEM 1215</td>
</tr>
<tr>
<td>MSE 3210</td>
<td>Electronic Properties of Solids</td>
<td>3</td>
<td>MSE 2010, MATH 1320, CHEM 2310, PHYS 2220</td>
</tr>
<tr>
<td>ECE 2200</td>
<td>Electrical &amp; Computer Eng.</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>MSE 3032</td>
<td>Thermodynamics</td>
<td>4</td>
<td>MSE 2010, MATH 1320, CHEM 2310, PHYS 2220</td>
</tr>
<tr>
<td>MSE 3410</td>
<td>Intro to Polymers</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MSE 5025</td>
<td>Mechanical Properties of Solids</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MSE 5034</td>
<td>Kinetics of Solid-State Processes</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MSE 5032</td>
<td>Metallography</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MSE 5090</td>
<td>Case Studies in MSE</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MSE 5098</td>
<td>Senior Design</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>MSE 5099</td>
<td>Senior Thesis</td>
<td>2.5</td>
<td></td>
</tr>
</tbody>
</table>

**Technical Electives**

Students are required to complete four 5000-level or above courses from the approved Technical Elective list, visit mse.utah.edu for more information.

- Materials Science & Engineering Section 1
- Metallurgical Engineering Section 2
- Engineering & Science Section 3