PROGRAM DESCRIPTION
Materials engineers seek to optimize the performance of a product by manipulating the atoms and molecules that make up materials in order to control their properties. They contribute their expertise in every field of technology, including nano-sized cancer treatments, sustainable packaging and large-scale composites found in aerospace applications.

Cal Poly’s Materials Engineering is a small, family-like department that emphasizes hands-on learning with materials testing and analysis equipment. We strive for excellence in teaching that helps each member of our community achieve their future aspirations — whatever those may be.

OUR MISSION
Our mission is to be a vibrant, creative and effectual learning community that cultivates the unique capabilities of each individual to thrive in a complex, interconnected, technical and ever-changing world.

LABS
Cal Poly materials engineering labs use state-of-the-art instruments and testing equipment found in industry. Equipment includes an environmental scanning electron microscope, X-ray diffractometer, hardness testers, heat treatment labs and more.

ASSOCIATED CLUBS
- Alpha Sigma Mu Honor Society — alphasigmamu.org
- Engineers Without Borders — ewb.calpoly.edu
- Materials Engineering Student Society — calpolymess.weebly.com
- Micro Systems Technology Group — mstcalpoly.wordpress.com
- National Association of Corrosion Engineers — slocorrosion.weebly.com
- QL+ (Quality of Life Plus) — qlplus.calpoly.edu
- Power Engineering Society — web.calpoly.edu/~pesclub
- Renewable Energy Club — web.calpoly.edu/~recclub
- Society of Women Engineers — swe.calpoly.edu
- Women Involved in Software & Hardware (WISH) — calpoly.edu/~wish

The majority of Cal Poly Materials Engineering graduates find employment in the biomedical, electronic, aerospace and petroleum industries as executives, consultants, or in research and development. Other graduates are entrepreneurs who have started their own consulting or manufacturing companies.
### Suggested Four-year Academic Flowchart • 2022-2026 Catalog

#### B.S. in Materials Engineering

<table>
<thead>
<tr>
<th>Course # (Units)</th>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FRESHMAN</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATE 110 (1)</td>
<td>Introduction to Materials Engineering Design I</td>
<td>Introduction to Materials Engineering Design II</td>
<td>MATE 120 (1) (MATE 110)</td>
</tr>
<tr>
<td>MATE 210 (3)</td>
<td>MATE 210 (3)</td>
<td>CHEM 124 (4) or CHEM 127 (5)</td>
<td>MATE 215 (1) (PREQ or COREQ: MATE 210)</td>
</tr>
<tr>
<td>MATE 225 (1)</td>
<td>Materials Laboratory I</td>
<td>Materials Laboratory II</td>
<td>MATE 235 (1) (MATE 210)</td>
</tr>
<tr>
<td>MATE 232 (4)</td>
<td>Materials, Ethics, and Society</td>
<td>Materials Laboratory III</td>
<td>MATE 245 (1) (MATE 230 &amp; 235)</td>
</tr>
<tr>
<td>MATH 141 (4)*</td>
<td>Calculus I</td>
<td>MATH 143 (4)*</td>
<td>MATE 280 (4) (MATH 140, MATH 142, MATH 232)</td>
</tr>
<tr>
<td>MATH 143 (4)*</td>
<td>Calculus II</td>
<td>MATH 241 (4)</td>
<td>MATE 360 (4) (MATE 225)</td>
</tr>
<tr>
<td>MATH 144 (4)</td>
<td>Calculus III</td>
<td>MATH 244 (4)</td>
<td>MATE 370 (4) (MATE 225, MATH 242)</td>
</tr>
<tr>
<td>PHYS 141 (4)*</td>
<td>General Physics I</td>
<td>Linear Analysis I</td>
<td>MATH 143 (4)</td>
</tr>
<tr>
<td>PHYS 142 (4)</td>
<td>General Physics II</td>
<td>MATH 244 (4)</td>
<td>MATH 242 (4)</td>
</tr>
<tr>
<td>ENGL 133 or 134 (4)**</td>
<td>Oral Communication</td>
<td>MATH 241 (4)</td>
<td>MATH 242 (4)</td>
</tr>
</tbody>
</table>

**Notes:**
- MOST GENERAL EDUCATION COURSES CAN BE TAKEN IN ANY ORDER AS LONG AS PREREQUISITES ARE MET.
- Transfer students - see department for flowchart information intended specifically for transfer students.
- * Refer to current catalog for prerequisites.
- ** One course from each of the following GE areas must be completed: A1, A2, B1, B2, B3, C1, C2, Lower-Division C Elective, Upper-Division C, D1, Area D Elective, Lower-Division E, and F. Upper-Division C should be taken only after junior standing is reached (90 units).
- Refer to online catalog for GE course selection, United States Cultural Pluralism (USCP) and Graduation Writing Requirement (GWR).
- USCP requirement can be satisfied by some (but not all) courses within GE categories: C1, Upper-Division C, D1, D2, Upper-Division D, or E.
- If a course is taken to meet this requirement, it cannot be double-counted to satisfy another Major or Support requirement.
- * Consultation with an advisor is recommended prior to selecting Technical or Approved Electives; bear in mind your selections may impact pursuit of post-baccalaureate studies and/or other units.
- 8 units maximum of MATE 400 and/or MATE 500 may count towards Technical Electives or Approved Elective/Technical Breadth Electives.
- Required in Major or Support; also satisfies General Education (GE) requirement.
- ENGR 459, ENGR 460, and ENGR 461 (6) may substitute for MATE 482, MATE 483, and MATE 484 (5) with the one excess unit counting towards Technical Electives.
- Select 4 to 5 units from the following: CHEM 312; ENGR 334; IME 303; JTP 341; MATE 390; NR 434.

**Legend:**
- Required in Major (71)
- Required in Support (65-67)
- Required in General Ed. (48)

**Total:** 184-186