PROGRAM DESCRIPTION

Biomedical engineering is an interdisciplinary field in which engineering principles and tools are applied to solve biomedical challenges. By its very nature, biomedical engineering is broad and requires a depth of understanding in engineering as well as in physiology and other biological sciences.

Biomedical engineering graduates are able to synthesize engineering expertise and medical needs to innovatively solve complex problems in biology and medicine.

This program is an excellent choice for those individuals considering careers in medicine as medical science continues to advance.

ASSOCIATED CLUBS

• Biomedical Engineering Society — bmes.calpoly.edu
• Biomimicry Club — cpslobiomimicry.wordpress.com
• Cure SLO — cure.org/c/calpoly
• Engineering World Health — cpsloewh.wix.com/cal-poly-ewh
• Engineers Without Borders — ewb.calpoly.edu
• Medical Design Club — mdc.calpoly.edu
• QL+ (Quality of Life Plus) — qlplus.calpoly.edu
• Society of Women Engineers — swe.calpoly.edu

CONCENTRATIONS

Bioinstrumentation: This concentration prepares you for entry-level jobs in the biomedical devices industry where a deeper understanding of electrical engineering skills is necessary.

Mechanical design: This concentration prepares you for employment in the product development, design or manufacturing fields in the biomedical device industry.

BIOMEDICAL ENGINEERING GRADUATES

Biomedical engineering graduates successfully transition into the medical device industry and often find jobs at prominent and global leaders in medical devices and healthcare. Major employers include Johnson & Johnson, GE Healthcare, Medtronic, Philips Healthcare, Samsung Healthcare and Toshiba Medical Systems.

385 undergraduate students

enrolled in biomedical engineering

41 graduate students

enrolled in the blended B.S. and M.S. programs
# B.S. in Biomedical Engineering

## Suggested Four-year Academic Flowchart - 2022-2026 Catalog

### General Curriculum

<table>
<thead>
<tr>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMED 101 (1)</td>
<td>BMED 102 (1)</td>
<td>BMED 204 (3)</td>
</tr>
<tr>
<td>MATH 141 (4)</td>
<td>MATH 142 (4)</td>
<td>MATH 244 (4)</td>
</tr>
</tbody>
</table>

### Upper-Division B

<table>
<thead>
<tr>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMED 450 (4)</td>
<td>BMED 456 (4)</td>
<td>(4)³</td>
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</tbody>
</table>

### Area B Elective

- BMED 310 (3) or EE 201 (3) (Recom: Concur MATE 212)

### Writing Arguments About STEM

<table>
<thead>
<tr>
<th>Fall</th>
<th>Winter</th>
<th>Spring</th>
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<tbody>
<tr>
<td>ENGL 147 (4)</td>
<td>(A3)</td>
<td>(4)³</td>
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</tbody>
</table>

### Projects

- BMED 310 (4) (ME 212; PHYS 142)

### Approved Support Elective

- MATE 215 (3) or ME 302 (4) (ME 211; PHYS 142)

### General Chemistry for Physical Science and Engineering I

| CHEM 124 (4) | CHEM 125 (4) |

###GE (4) **

- Can be taken anytime during Freshman Year

### Oral Communication

| COMS 101 or 102 (4)² (A1) |

### Expository Writing

| ENGL 133 or 134 (4)² (A2) |

### General Chemistry for Physical Science and Engineering II

| PHYS 141 (4) | PHYS 142 (4) |

### GE (4) **

- Can be taken anytime during Freshman Year

### Integration to Cell & Molecular Biology

| BIO 161 (4) |

### GE (4) **

- Can be taken anytime between Winter of Freshman and Winter of Sophomore Years

### Writing Arguments About STEM

| ENGL 147 (4) (A3) |

### Graduation Writing Requirement: GWR³

- (Students can attempt to fulfill the requirement after 50 earned units; students should complete the requirement before senior year)

### Notes:

** Most General Education Courses can be taken in any order as long as prerequisites are met.

* Refer to catalog for prerequisites.

** One course from each of the following GE areas must be completed: A1, A2, 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).

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.

† Course can be taken previously or concurrently.

1. ME 228 only required for the General Curriculum and the Mechanical Design Concentration.

2. CE 207 or EE 321 is required for the General Curriculum. CE 207 is required for the Mechanical Design Concentration. CE 308 (5) may substitute for both CE 204 (3) and  207 (2).

3. Refer to current catalog for course selection. Technical electives must total 12 units.

4. ENGR 459, 460, 461, and BMED 400 (8 units) or ENGR 463, 464, 465, and BMED 400 (8) may substitute for BMED 455 and BMED 456 (8).

** Unless a concentration is declared, the default will be general curriculum in biomedical engineering.