**Biomedical Engineering**  
Curriculum for BME Students

<table>
<thead>
<tr>
<th>Freshman (16 cr)</th>
<th>Sophomore (16 cr)</th>
<th>Junior (16 cr)</th>
<th>Senior (12 cr)</th>
<th>(13 cr)</th>
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<tbody>
<tr>
<td>Math 131</td>
<td>Math 132</td>
<td>Math 233</td>
<td>Math 331</td>
<td>Engin 351</td>
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<td>Chem 111</td>
<td>Chem 112</td>
<td>BME 210</td>
<td>MIE 201</td>
<td>STAT 515</td>
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<td>Engin 114</td>
<td>CMPSCI 119² or ECE 122/CS 121³</td>
<td>BME 230</td>
<td>MIE 211/BME 297M</td>
<td>BME 300</td>
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<td>Engin 191</td>
<td>Phys 151</td>
<td>Phys 152</td>
<td>BME 275</td>
<td>BME 310⁶</td>
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<td>EnglWrit 112</td>
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<td>BME 310⁶</td>
<td>Tech Elective</td>
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<td>Social World/Diversity Elective¹</td>
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<td>Tech Elective</td>
<td>Social World Elective</td>
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<td></td>
<td>KIN 270</td>
<td>Social World Elective</td>
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</tbody>
</table>

Solid arrows indicate prerequisite courses. Dashed arrows indicate courses that can be taken as co-requisites (department approval required in some cases).

1) Students must take two Diversity courses to meet university general education (gen ed) requirements, one must be during the first year; information on the social world gen eds (including diversity) can be found here: [https://www.umass.edu/gened/students/fulfilling-requirements](https://www.umass.edu/gened/students/fulfilling-requirements)

2) CS 119 may be taken in Fall or Spring of freshman year; it can be swapped with the Social World/Diversity elective.

3) Students interested in Bioinstrumentation should take ECE 122; CMPSCI 121 requires Math 131 as a prerequisite.

4) BME 310 will be offered in both fall and spring semesters; STAT 515 or a tech elective could be moved forward.

5) BME 414: Student preferred to have all courses as prerequisites. Department approval needed for students taking BME 300 or 310 as co-requisites.

6) Students must have at least five (5) technical electives (total of 15 credits). No more than three (3) electives may be at the 200-level, and only one of those may be an Engineering course. Students must have at least two (2) 300-level or higher technical elective courses.

7) Students must have a cumulative and major GPA of at least 2.0 in order to graduate.

Contact the BME advisor if you have questions: [https://bme.umass.edu/undergraduate-students](https://bme.umass.edu/undergraduate-students)
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Curriculum for BME Students

Course Titles and Numbers

BME 210  Intro to Bioengineering/Biology for Engineers
BME 230  Statics & Dynamics
BME 275  Biomechanics
BME 297M  Strength of Materials
BME 300  Biomaterials
BME 310  Intro to Laboratory Techniques
BME 320  Bioinstrumentation
BME 330  Quantitative Physiology
BME 414  Senior Design I
BME 415  Senior Design II
BME 430  Systems Biology (same as BME 497B)
Chem 111  Chemistry I
Chem 112  Chemistry II
CmpSci 119  Intro to Programming
ECE 361  Fundamentals of Electrical Engineering
Engin 114  Intro to Engineering: Biomedical Engineering
Engin 191  Freshman Seminar
Engin 351  Writing in Engineering (junior year writing)
EnglWrit 112  College Writing
KIN 270  Anatomy & Physiology I
Math 131  Calculus I
Math 132  Calculus II
Math 233  Multivariate Calculus/Calculus III
Math 331  Differential Equations
MIE 201  Intro to Materials Science
MIE 211  Strength of Materials
STAT 515  Statistics I
Phys 151  Physics I
Phys 152  Physics II

List of pre-approved technical electives and the alternative elective form may be found on the BME undergraduate webpage. This list is a work in progress and is updated regularly; contact the BME advisor for questions: https://bme.umass.edu/undergraduate-students