### Cell & Tissue Track - Curriculum Map

<table>
<thead>
<tr>
<th>Fall Year 1 (16 hrs)</th>
<th>Spring Year 1 (16 hrs)</th>
<th>Fall Year 2 (17 hrs)</th>
<th>Spring Year 2 (18 hrs)</th>
<th>Fall Year 3 (17 hrs)</th>
<th>Spring Year 3 (14 hrs)</th>
<th>Fall Year 4 (14/17 hrs)</th>
<th>Spring Year 4 (14 hrs)</th>
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<tbody>
<tr>
<td>MATH 221 (4) Calculus I</td>
<td>MATH 231 (3) Calculus II</td>
<td>MATH 241 (4) Calculus III</td>
<td>MATH 285 (3) Intro Diff Eq</td>
<td>BIOE 476 (3) Tissue Engineering</td>
<td>BIOE 310 (3) Comp Tools for Bio Data</td>
<td>BIOE 435 (2) Sr. Design I</td>
<td>BIOE 436 (2) Sr. Design II</td>
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<tr>
<td>ENG 100 (0) Engineering Lecture</td>
<td>PHYS 211 (4) Univ Physics, Mechanics</td>
<td>PHYS 212 (4) Univ Physics, Elec &amp; Mag</td>
<td>BIOE 205 (3) Systems in Bioengineering</td>
<td>BIOE 220 (3) Bioenergetics</td>
<td>BIOE 360 (3) Transport &amp; Flow in Bioengineering</td>
<td>BIOE 420 (3) Intro Bio Control Systems</td>
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<tr>
<td>BIOE 199/100 (1) Undergraduate Seminar</td>
<td>RHET 105 (4) Principles of Composition</td>
<td>BIOE 120 (1) Introduction to Bioengineering</td>
<td>BIOE 210 (3) Linear Algebra for Biomedical Data Science</td>
<td>BIOE 302 (3) Modeling Human Physiology</td>
<td>BIOE 414 (3) Biomedical Instrumentation</td>
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<tr>
<td>CHEM 102 (3) General Chemistry I</td>
<td>CHEM 103 (1) General Chem Lab I</td>
<td>MCB 150 (4) Molec &amp; Cellular Basis of Life</td>
<td>CHEM 232 (4) Organic Chemistry I</td>
<td>BIOE 303 (2) Quant Human Physiology Lab</td>
<td>BIOE 415 (2) Biomedical Instrumentation</td>
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<td>C</td>
<td>CHEM 104 (3) General Chemistry II</td>
<td>BIOE 198 (2) Biomedical Data Analysis</td>
<td>BIOE 200 (1) BIOE Career Immersion</td>
<td>BIOE 298 AMS (1) Career Ecosystems</td>
<td>Free Elec (3)</td>
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<tr>
<td>CHEM 105 (1) General Chem Lab II</td>
<td>BIOE 206 (3) Cellular Bioengineering</td>
<td>BIOE 200 (1) BioE Career Immersion</td>
<td>BIOE 298 AMS (1) Career Ecosystems</td>
<td>SS/Hum (3)</td>
<td>Track Elec (3)</td>
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**Cell & Tissue Track Electives:**
- BIOE 306 – Biofabrication Lab (3 hr)
- BIOE 416 – Biosensors (3 hr)
- BIOE 424 – Systems Bioengineering (3 hr)
- BIOE 430 – Intro to Synthetic Biology (3 hr)
- BIOE 460 – Gene Editing Lab (3 hr)
- BIOE 461 – Cellular Biomechanics (4 hr)
- BIOE 487 – Stem Cell Bioengineering (3 hr)
- BIOE 498 JI – Finite Element Mtsds in Biomed (3 hr)
- BIOE 498 WD – Preclinical Molecular Imaging (3 hr)
- MSE 404 – Lab Studies in Mat SE (Biomaterials) (1.5 hr each)
- MSE 470 – Design and Use of Biomaterial (3 hr)
- MSE 474 – Biomaterials and Nanomedicine (3 hr)
- CHBE 471 – Biochemical Engineering (3 hr)
- CHBE 472 – Techniques in Biomolecular Engineering (3 hr)
- IE 330 – Industrial Quality Control (3 hr)
- TMGT 461 Sections TMD/TME – Tech, Eng, and Mngmt Final Project (4 hr)
- ME 483 – Mechanobiology (4 hr)

**Note – not taking courses as advised may result in a delayed graduation date. Students are responsible for any impact resulting from not following departmental advising.**

**If outlined in RED then the BIOE course is offered both Fall & Spring Semesters**

**Courses with dashed line borders are not currently required as part of the Core BIOE Curriculum**
# Other Requirements

## General Education Requirements
- 6 hours in Humanities
- 6 hours in Social/Behavioral Sciences
- 6 hours in Liberal Education
- 1 Advanced Composition Course
- 1 Western Comparative Cultures Course
- 1 Non-Western Comparative Cultures Course
- 1 US Minority Cultures Course (FA 2018 admits and beyond only)
- 3rd Level of a Foreign Language

## Premed Requirements
- Meet with Engineering Career Services Premed advisor
- **Common Courses** *(additional requirements may apply depending on school)*:
  - MCB 450/354 (BioChem)
  - CHEM 233 (Orgo 1 lab)
  - Social/Behavioral Science Sequence (3 courses)