Cell & Tissue Track - Curriculum Map

Fall Year 1 (16 hrs)
- MATH 221 (4) Calculus I
- ENG 100 (0) Engineering Lecture
- BIOE 199/100 (1) Undergraduate Seminar
- RHET 105 (4) Principles of Composition
- CHEM 102 (3) General Chemistry I
- CHEM 103 (1) General Chem Lab I

Spring Year 1 (16 hrs)
- MATH 231 (3) Calculus II
- PHYS 211 (4) Univ Physics, Mechanics
- BIOE 120 (1) Introduction to Bioengineering
- MCB 150 (4) Molec&Cellular Basis of Life
- CHEM 104 (3) General Chemistry II

Fall Year 2 (17 hrs)
- MATH 241 (4) Calculus III
- PHYS 212 (4) Univ Physics, Elec & Mag
- CS 101 (3) Intro to Comp
- BIOE 200 (1) BIOE Career Immersion
- CHEM 105 (1) General Chem Lab II

Spring Year 2 (18 hrs)
- MATH 285 (3) Intro Diff Eq
- BIOE 205 (3) Systems in Bioengineering
- BIOE 201 (3) Conservation Princ Bioeng
- BIOE 206 (3) Cellular Bioengineering
- BIOE 298 AMS (1) Career Ecosystems

Fall Year 3 (14 hrs)
- BIOE 476 (3) Tissue Engineering
- BIOE 210 (3) Linear Algebra for Biomedical Data Science
- BIOE 202 (2) Cell & Tissue Engineering Lab
- CHEM 232 (4) Organic Chemistry I
- BIOE 303 (2) Quant Human Physiology Lab

Spring Year 3 (14/17 hrs)
- BIOE 310 (3) Comp Tools for Bio Data
- BIOE 302 (3) Modeling Human Physiology
- BIOE 414 (3) Biomedical Instrumentation
- BIOE 415 (2) Biomedical Instrumentation Lab
- MCB 450 (3) (as free elective)

Fall Year 4 (14 hrs)
- BIOE 435 (2) Sr. Design I
- BIOE 436 (2) Sr. Design II
- BIOE 420 (3) Intro Bio Control Systems

Spring Year 4
- Free Elec (3)
- Track Elec (3)
- Track Elec (3)
- SS/Hum(3)
- SS/Hum(3)

**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 Mthds in Biomed (3 hr)
- MSE 404 – LabStudies in MatSE (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)

**BIOE 498 WD counts only if taken in FA 2017.**

**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

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<tr>
<th>General Education Requirements</th>
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<tr>
<td>- 6 hours in Humanities</td>
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<td>- 6 hours in Social/Behavioral Sciences</td>
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<tr>
<td>- 6 hours in Liberal Education</td>
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<tr>
<td>- 1 Advanced Composition Course</td>
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<tr>
<td>- 1 Western Comparative Cultures Course</td>
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<td>- 1 Non-Western Comparative Cultures Course</td>
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<td>- 1 US Minority Cultures Course (FA 2018 admits and beyond only)</td>
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<td>- 3rd Level of a Foreign Language</td>
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<th>Premed Requirements</th>
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<tr>
<td>- Meet with Engineering Career Services Premed advisor</td>
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<td>- Common Courses <em>(additional requirements may apply depending on school)</em>:</td>
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<tr>
<td>- MCB 450/354 (BioChem)</td>
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<td>- CHEM 233 (Orgo 1 lab)</td>
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<td>- Social/Behavioral Science Sequence (3 courses)</td>
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