Therapeutics 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
- SS/Hum (3)

**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
- CHEM 105 (1) General Chem Lab II
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**Fall Year 2 (17 hrs)**
- MATH 241 (4) Calculus III
- PHYS 212 (4) Univ Physics, Elec & Mag
- BIOE 201 (3) Conservation Princ Bioeng
- BIOE 206 (3) Cellular Bioengineering
- BIOE 200 (1) BIOE Career Immersion
- CHEM 232 (4) Organic Chemistry I
- BIOE 298 AMS (1) Career Ecosystems
- SS/Hum (3)

**Spring Year 2 (18 hrs)**
- MATH 285 (3) Intro Diff Eq
- BIOE 205 (3) Systems in Bioengineering
- BIOE 210 (3) Linear Algebra for Biomedical Data Science
- CHEM 232 (4) Organic Chemistry I
- BIOE 202 (2) Cell & Tissue Eng. Lab
- BIOE 303 (2) Quant Human Physiology Lab
- BIOE 415 (2) Biomedical Instrumentation Lab
- FREE Elec (3)

**Fall Year 3 (17 hrs)**
- BIOE 476 (3) Tissue Engineering
- BIOE 301 (3) Comp Tools for Bio Data
- BIOE 220 (3) Bioenergetics
- BIOE 302 (3) Modeling Human Physiology
- BIOE 303 (2) Quant Human Physiology Lab
- FREE Elec (3)

**Spring Year 3 (14/17 hrs)**
- BIOE 310 (3) Comp Tools for Bio Data
- BIOE 360 (3) Transport & Flow in Bioengineering
- FREE Elec (3)

**Fall Year 4 (14 hrs)**
- BIOE 435 (2) Sr. Design I
- BIOE 436 (2) Sr. Design II
- FREE Elec (3)

**Spring Year 4 (14 hrs)**
- FREE Elec (3)

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**Therapeutics Track Electives**
- BIOE 306 – Biofabrication Lab (3 hr)
- BIOE 424 – Systems Bioengineering (3 hr)
- BIOE 430 – Intro Synthetic Biology (3 hr)
- BIOE 460 – Gene Editing Lab (3 hr)
- BIOE 477 – Imaging & Therapeutic Probes (3 hr)
- BIOE 479 – Cancer Nanotechnology (3 hr)
- BIOE 488 WD – Preclinical Molecular Imaging (3 hr)
- MSE 403 – Synthesis of Materials (3 hr)
- MSE 404 – (Polymer characterization option) – (1.5 hr)
- MSE 450 – Polymer Science and Engr (3 hr)
- MSE 470 – Design and Use of Biomaterials (3 hr)
- MSE 473 – Biomolecular Materials Science (3 hr)
- MSE 474 – Biomaterials and Nanomedicine (3 hr)
- MSE 480 – Surfaces and Colloids (3 hr)
- ABE 446 – Biological Nanoengineering (3 hr)
- ECE 481 – Nanotechnology (3 hr)
- CHBE 472 – Techniques in Biomolecular Engineering (3 hr)
- TMGT 461 Sections TMD/TME – Tech, Eng, and Mngmt Final Project (4 hr)

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