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 Chemistry 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 Chemistry Lab II
- SS/Hum (3)

Fall Year 2 (17 hrs)
- MATH 241 (4) Calculus III
- PHYS 212 (4) Univ Physics, Elec & Mag
- CS 101 (3) Intro to Comp
- BIOE 201 (3) Conservation Princ Bioeng
- BIOE 206 (3) Cellular Bioengineering
- BIOE 200 (1) BIOE Career Immersion
- SS/Hum (3)

Spring Year 2 (18 hrs)
- MATH 285 (3) Intro Diff Eq
- BIOE 205 (3) Systems in Bioengineering
- BIOE 201 (3) Linear Algebra for Biomedical Data Science
- CHEM 232 (4) Organic Chemistry I
- BIOE 209 (1) Biofabrication Lab (3 hr)
- BIOE 415 (2) Biomedical Instrumentation Lab
- SS/Hum (3)

Fall Year 3 (17 hrs)
- BIOE 476 (3) Tissue Engineering
- BIOE 220 (3) Bioenergetics
- BIOE 302 (3) Modeling Human Physiology
- BIOE 303 (2) Quant Human Physiology Lab
- BIOE 457 – Biofabrication Lab (3 hr)
- BIOE 414 (3) Biomedical Instrumentation
- Free Elec (3)

Spring Year 3 (14/17 hrs)
- BIO 310 (3) Comp Tools for Bio Data
- BIOE 424 – Systems Bioengineering (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 457 – Polymer Chemistry (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 Mgmt Final Project (4 hr)

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

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

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 498 NIE – Surgical Technologies (3 hr)
- BIOE 498 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)

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

** 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.
## 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)