Biomedical Engineering – Example Program Map
Computational Bioengineering (AI in Medicine)

Semester 1
- Chem I / Lab — CHEM:1110
- Engr Math I — MATH:1550
- Intro Engr Prob Solving — ENGR:1100
- Rhetoric — RHET:1030
- Engr Success First Year — ENGR:1000

Semester 2
- Chem II / Lab — CHEM:1120
- Engr Math II — MATH:1560
- Engr Math III — MATH:2550
- Physics I / Lab — PHYS:1611
- Intro Engr Computing — ENGR:1300
- BME Forum — BME:1010

Semester 3
- Foundations of Biology / Lab — BIOL:1411
- Engr Math IV — MATH:2560
- Statics — ENGR:2110
- Elec Circuits — ENGR:2120
- Comp in Engr — ENGR:2730
- BME Prof Seminar — BME:2010

Semester 4
- Human Physiology HHP:3500 or BME:2260 Quantitative Physiology
- Biostatistics BIOS:4120 or STAT:3510
- Bioimaging & Bioinformatics / Lab — BME:2210
- Cell Biology for Engr / Lab — BME:2400
- Intro to AI & Machine Learning — ENGR:3110

Semester 5
- Systems, Instrum, & Data Acquisition / Lab BME:2200
- Biomaterials & Biomechanics / Lab — BME:2500
- Computational Biochemistry — BME:4310
- Intro to Software Design — ECE:3330
- Cultural Perspectives, Values, and Society

Semester 6
- Physics II / Lab — PHYS:1612
- Biochemistry — BMB:3110
- Approved GEC course
- Computational Bioinformatics — BME:5335
- Be Creative

Semester 7
- BME Senior Design I — BME:4910
- Generative AI Tools — ECE:5995
- Digital Image Processing — ECE:5480
- Deep Learning in Medical Imaging — BME:5240
- Software Engr Languages & Tools ECE:5820 or Thermodynamics ENGR:2130

Semester 8
- BME Senior Design II — BME:4920
- Fundamental Genetics — BIOL:2512
- Graph Algorithms & Combinatorial Optimization — ECE:5330
- Approved GEC course
- Approved GEC course

Legend:
- Math & Science Courses
- Required Engineering Courses
- Focus Area Required Courses
- General Education Courses
- Engineering Core Courses
- Biomedical Core Courses
- Focus Area Elective Courses
- Seminars

At least two Focus Area Electives must be from the list of Engineering Topics.

Last updated 10/11/24