

Biomedical Engineering – Program Map:

Computational Bioengineering (Software Development)

Semester	Course 1	Course 2	Course 3	Course 4	Course 5	Seminar
1	Principles Chem I / Lab CHEM:1110 (Math & Science)	Engr Calculus I MATH:1550 (Math & Science)	Intro Engineering Problem Solving ENGR:1100 (Engineering Core)	Rhetoric RHET:1030 (Gen Ed)	—	
2	Principles Chem II / Lab CHEM:1120 (Math & Science)	Engr Calculus II MATH:1560 (Math & Science)	Engr Matrix Algebra MATH:2550 (Math & Science)	Physics I / Lab PHYS:1611 (Math & Science)	Intro Engr Computing ENGR:1300 (Engineering Core)	BME Forum BME:1010
3	Foundations of Biology / Lab BIOL:1411 (Math & Science)	Engr Diff Equations MATH:2560 (Math & Science)	Statics ENGR:2110 (Required Engineering)	Electrical Circuits ENGR:2120 (Required Engineering)	Computers in Engineering ENGR:2730 (Focus Area Required)	BME Prof Seminar BME:2010
4	Fund Human Physiology HHP:2400 or BME:3260 Quantitative Physiology (Math & Science)	Biostatistics BIOS:4120 or STAT:3510 (Math & Science)	Bioimaging & Bioinformatics / Lab BME:2210 (Biomedical Core)	Cell Biology for Engr / Lab BME:2400 (Biomedical Core)	Intro AI & Machine Learning ENGR:3110 (Required Engineering)	
5	Systems, Instrum, & Data Acquisition / Lab BME:2200 (Biomedical Core)	Biomaterials & Biomechanics / Lab BME:2500 (Biomedical Core)	Intro to Software Design ECE:3330 (Focus Area Required)	Computational Biochemistry BME:4310 (Focus Area Required)	Cultural Perspectives, Values, & Society (Gen Ed)	
6	Internet of Things ECE:5550 (Focus Area Elective)	Graph Algorithms & Combinatorial Optimization ECE:5330 (Focus Area Elective)	Fundamentals of Software Engr ECE:5800 or ENGR:2130 Thermodynamics (Focus Area Elective)	Computational Bioinformatics BME:5335 (Focus Area Required)	Be Creative (Gen Ed)	
7	BME Senior Design I BME:4910 (BME Core)	Software Engr Language & Tools ECE:5820 (Focus Area Elective)	Digital Image Processing ECE:5480 (Focus Area Elective)	Deep Learning in Medical Imaging BME:5240 (Focus Area Elective)	Approved Gen Ed course	
8	BME Senior Design II BME:4920 (BME Core)	Physics II / Lab PHYS:1612 (Math & Science)	Numerical & Stat Methods for Bioengr BME:5441 (Focus Area Elective)	Approved Gen Ed course	Approved Gen Ed course	

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