

**Biomedical Engineering – Program Map:**  
**Biomechanics & Biomaterials (Cardiopulmonary)**

Semester	Course 1	Course 2	Course 3	Course 4	Course 5	Seminar
1	Principles Chem I / Lab <b>CHEM:1110</b> (Math & Science)	Engr Calculus I <b>MATH:1550</b> (Math & Science)	Intro Engineering Problem Solving <b>ENGR:1100</b> (Engineering Core)	Rhetoric <b>RHET:1030</b> (Gen Ed)	—	
2	Principles Chem II / Lab <b>CHEM:1120</b> (Math & Science)	Engr Calculus II <b>MATH:1560</b> (Math & Science)	Engr Matrix Algebra <b>MATH:2550</b> (Math & Science)	Physics I / Lab <b>PHYS:1611</b> (Math & Science)	Intro Engr Computing <b>ENGR:1300</b> (Engineering Core)	BME Forum <b>BME:1010</b>
3	Foundations of Biology / Lab <b>BIOL:1411</b> (Math & Science)	Engr Diff Equations <b>MATH:2560</b> (Math & Science)	Statics <b>ENGR:2110</b> (Required Engineering)	Electrical Circuits <b>ENGR:2120</b> (Required Engineering)	Thermodynamics <b>ENGR:2130</b> (Required Engineering)	BME Prof Seminar <b>BME:2010</b>
4	Fund Human Physiology <b>HHP:2400</b> or <b>BME:3260</b> Quantitative Physiology (Math & Science)	Biostatistics <b>BIOS:4120</b> or <b>STAT:3510</b> (Math & Science)	Systems, Instrum, & Data Acquisition / Lab <b>BME:2200</b> (Biomedical Core)	Biomaterials & Biomechanics / Lab <b>BME:2500</b> (Biomedical Core)	Dynamics <b>ENGR:2710</b> (Focus Area Required)	
5	Cell Biology for Engr / Lab <b>BME:2400</b> (Biomedical Core)	Bioimaging & Bioinformatics / Lab <b>BME:2210</b> (Biomedical Core)	Mech Def Bodies <b>ENGR:2750</b> (Focus Area Required)	Fluid Mechanics <b>ENGR:2510</b> (Focus Area Required)	Engr Drawing, Design, & Solid Modeling <b>BME:2710</b> (Focus Area Elective)	
6	Materials Science <b>ENGR:2720</b> (Focus Area Required)	Physics II / Lab <b>PHYS:1612</b> (Math & Science)	Med Device Design Fundamentals <b>BME:3710</b> (Focus Area Elective)	Cardiovascular Engineering <b>BME:5510</b> (Focus Area Elective)	Cultural Perspectives, Values, and Society (Gen Ed)	
7	BME Senior Design I <b>BME:4910</b> (BME Core)	Biotransport <b>BME:5430</b> (Focus Area Elective)	Biomedical Micro Devices & Systems <b>BME:5460</b> (Focus Area Elective)	Cardiopulmonary Design & Modeling <b>BME:5525</b> (Focus Area Elective)	Be Creative (Gen Ed)	
8	BME Senior Design II <b>BME:4920</b> (BME Core)	Quant Studies of Respiratory & CV Syst <b>BME:5540</b> (Focus Area Elective)	Approved Gen Ed course	Approved Gen Ed course	Approved Gen Ed course	

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