Biomedical Engineering – Program Map:

Bioimaging Focus Area (AI in Image Processing)

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)*	Intro AI & Machine Learning **ENGR:3110** *(Required Engineering)*	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)*	Systems, Instrum, & Data Acquisition / Lab **BME:2200** *(Biomedical Core)*	Bioimaging & Bioinformatics / Lab **BME:2210** *(Biomedical Core)*	Computers in Engineering **ENGR:2730** *(Focus Area Required)*	
5	Cell & Tissue Engineering Fundamentals / Lab **BME:2400** *(Biomedical Core)*	Biomaterials & Biomechanics / Lab **BME:2500** *(Biomedical Core)*	Medical Imaging Physics **BME:5210** *(Focus Area Required)*	Digital Image Processing **ECE:5480** *(Focus Area Required)*	Cultural Perspectives, Values, & Society *(Gen Ed)*	
6	Scientific Computing and Machine Learning **ME:4111** *(Focus Area Elective)*	Biomed Signal Processing **BME:5200** *(Focus Area Elective)*	Machine Learning **ECE:5200** *(Focus Area Elective)*	Intro to Software Design **ECE:3330** *(Focus Area Required)*	Be Creative *(Gen Ed)*	
7	BME Senior Design I **BME:4910** *(BME Core)*	Deep Learning Med Imaging **BME:5240** *(Focus Area Elective)*	Advanced Biosystems **BME:5251** or Generative AI Tools **ECE:5230** *(Focus Area Elective)*	Digital Signal Processing **ECE:5460** *(Focus Area Elective)*	Approved Gen Ed course	
8	BME Senior Design II **BME:4920** *(BME Core)*	Physics II / Lab **PHYS:1612** *(Math & Science)*	Multidim Image Analysis Tools & Tech **ECE:5490** or Applied Machine Learning **ECE:5215** *(Focus Area Elective)*	Approved Gen Ed course	Approved Gen Ed course	

***If ENGR:3110 is not in Fall, students should take ENGR:2730 Computers in Engineering in Semester 3 and ENGR:3110 in Semester 4.**

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

Last updated 05/12/2026