BME Graduate Program Courses

For all students pursuing the shared credit program for an MS in BME, the following courses are offered every year:

BME Core Courses	
BME 547	Biomedical Engineering Research Practices
BME 558	Methods of Analysis in Bioengineering
BME 567	Biomedical Engineering Seminar
BME 586	Intro Statistics and Design of Experiments
CBE 551	Problems (offered every semester, including summers, listed by faculty name)

The following Emphasis Area Core courses are offered every other year:

Emphasis Area 1: Molecular and Cellular Systems	
BME 517	Applied Biology for Biomedical Engineers
BME 544	Thermodynamics of Biological Systems
BME 556	Protein and Nucleic Acid Engineering

Emphasis Area 2: Biomaterials, Biomechanics, and Tissue Engineering	
BME 572	Biomaterials Engineering
BME 579	Tissue Engineering
BME 598	Biomechanics

Elective Courses
The following courses are offered as electives.

Biomedical Engineering Electives	
BME 570	Physical Bioanalytical Methods
BME 598	Special Topics (e.g., Good Manufacturing Processes, Engineering Design for Global Health, Biofouling, Photonics in Medicine, Biomechanical Mechatronics, Biophotonics & Spectroscopy)
Other Electives in the Schools of Medicine, Arts & Sciences, and Engineering	
BIOL **351	General Microbiology
BIOL 547	Advanced Techniques in Light Microscopy
BIOM 507/ BIOL 581	Advanced Molecular Biology
BIOM 508/ BIOL 582	Advanced Cell Biology

BIOM 509	Principles of Neurobiology
BIOM 510	Physiology
BIOM 514	Immunobiology
BIOM 515	Cancer Biology
BIOM 516	Molecular Genetics and Genomics
CBE/ NSMS 522L	Fundamentals of Nanofluidics
CBE/ NSMS 530	Surface and Interfacial Phenomena
CBE/ NSMS 538/438	Biosensors Fundamentals and Applications
CBE 504	Nanomaterials
CBE 521	Advanced Transport Phenomena I
CS 529	Introduction to Machine Learning
CS 530	Geometric and Probabilistic Methods in CS
CS 561	Algorithms and Data Structures
CS 590	Topics: Complex Adaptive Systems
ECE 500	Theory of Linear Systems
ECE 510	Medical Imaging
ECE 533	Digital Image Processing
ECE 537	Foundations of Computing
ECE 539	Digital Signal Processing I
ME 501	Advanced Mechanics of Materials
ME 504	Computational Mechanics
ME 512	Introduction to Continuum Mechanics
ME 530	Theoretical Fluid Mechanics I
ME 571	Advanced Materials Science