MINOR IN BIOMEDICAL ENGINEERING

The Biomedical Engineering Minor (BME) program requires a total of seven subjects selected from a series of categories as outlined below.

Programming and Computational Modeling Core
6.0001 Introduction to Computer Science 6
6.0002 Introduction to Computational Thinking and Data Science 6

Mathematics Core
Select two of the following options: 18-24

Option A
Select one of the following:
18.03 Differential Equations
3.016A Computational and Mathematics Preparation for Materials Scientists and Engineers I
& 3.016B Computational and Mathematics Preparation for Materials Scientists and Engineers II

Option B
18.06 Linear Algebra

Option C
Select one of the following:
1.010 Probability and Causal Inference
6.041 Introduction to Probability
9.07 Statistics for Brain and Cognitive Science

Human Physiology Core
Select one of the following: 12
6.022[J] Quantitative and Clinical Physiology
7.20[J] Human Physiology
9.01 Introduction to Neuroscience

Biomedical Engineering and Applications
Select three of the following: 30-36
2.184 Biomechanics and Neural Control of Movement
2.750[J] Medical Device Design
3.052 Nanomechanics of Materials and Biomaterials
3.054 Cellular Solids: Structure, Properties, Applications
3.055[J] Biomaterials Science and Engineering
6.021[J] Cellular Neurophysiology and Computing
6.811[J] Principles and Practice of Assistive Technology
7.37[J] Molecular and Engineering Aspects of Biotechnology
9.17 Systems Neuroscience Laboratory
9.24 Disorders and Diseases of the Nervous System
9.26[J] Principles and Applications of Genetic Engineering for Biotechnology and Neuroscience
9.35 Perception
9.40 Introduction to Neural Computation
10.424 Pharmaceutical Engineering
10.443 Future Medicine: Drug Delivery, Therapeutics, and Diagnostics
10.495 Molecular Design and Bioprocess Development of Immunotherapies
20.310[J] Molecular, Cellular, and Tissue Biomechanics
20.345[J] Bioinstrumentation Project Lab
20.352 Principles of Neuroengineering
20.390[J] Computational Systems Biology: Deep Learning in the Life Sciences

Total Units 72-84

A minimum of four subjects taken for the biomedical engineering minor cannot also count toward a major or another minor.

1 Contact minor advisor for additional 6–12 unit subjects that satisfy requirement.
2 Subject has prerequisites that are outside of the program.
3 At least one of the subjects must be taken outside the student’s major. See the BME Minor website (https://be.mit.edu/academic-programs/current-undergraduate/minor-programs/minor-program-biomedical-engineering) for potential substitutions.
4 Approved biomedical engineering UROPs with sufficient medical focus carried out by students with junior or senior standing with prior approval may be substituted for up to 12 units.

Students should consult with their departmental BME minor advisor, preferably in sophomore year and no later than the end of the fall term of junior year, to choose a course of study, which must be approved in advance by the BME minor advisor. For the list of BME minor advisors and other information, please visit the Biological Engineering website (http://web.mit.edu/be) or contact the BE Academic Office, Room 56-651, 617-253-1712.