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: 1 18-24

Option A
3.016 Computational Methods for Materials Scientists and Engineers
or 18.03 Differential Equations

Option B
18.06 Linear Algebra

Option C
Select one of the following:
1.010 Uncertainty in Engineering
6.041A Introduction to Probability I
& 6.041B and Introduction to Probability II
9.07 Statistics for Brain and Cognitive Science

Human Physiology Core
Select one of the following: 12
6.022[J] Quantitative Systems Physiology
7.20[J] Human Physiology 2
9.01 Introduction to Neuroscience

Biomedical Engineering and Applications
Select three of the following: 3-4 30-36
2.184 Biomechanics and Neural Control of Movement 2
2.750[J] Medical Device Design 2
3.052 Nanomechanics of Materials and Biomaterials 2
3.054 Cellular Solids: Structure, Properties, Applications 2
3.055[J] Biomaterials Science and Engineering 2
6.021[J] Cellular Neurophysiology and Computing
6.811[J] Principles and Practice of Assistive Technology 2
7.37[J] Molecular and Engineering Aspects of Biotechnology 2
9.17 Systems Neuroscience Laboratory 2
9.24 Disorders and Diseases of the Nervous System 2
9.26[J] Principles and Applications of Genetic Engineering for Biotechnology and Neuroscience 2
9.35 Perceptual Systems
9.40 Introduction to Neural Computation 2
10.424 Pharmaceutical Engineering 2
10.443 Future Medicine: Drug Delivery, Therapeutics, and Diagnostics 2
10.495 Molecular Design and Bioprocess Development of Immunotherapies 2
20.310[J] Molecular, Cellular, and Tissue Biomechanics 2
20.345[J] Bioinstrumentation Project Lab 2
20.352 Principles of Neuroengineering

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.