BIOMEDICAL ENGINEERING MAJOR

Prerequisites:
Majors are expected to have a basic understanding of calculus, physics, chemistry, and computer science. First-year students interested in the major should take the placement test in mathematics.

Mathematics (3 courses)
- MATH 3 Introduction to Calculus
- MATH 8 Calculus of Functions of One and Several Variables
- MATH 13 Calculus of Vector-Valued Functions

Biology (1 course)
- BIOL 11 The Science of Life

Chemistry (1-2 courses)
- CHEM 5–6 General Chemistry OR CHEM 10 Honors First-Year General Chemistry

Physics (2 courses)
- PHYS 13 Introductory Physics I
- PHYS 14 Introductory Physics II

Computer Science (choose 1 course)
- ENGS 20 Introduction to Scientific Computing
- COSC 1 Introduction to Computer Science

Required Courses:

Common core courses (2 courses)
- ENGS 21 Introduction to Engineering
- ENGS 22 Systems

Common and distributive core courses (choose 1 course)
- ENGS 23 Distributed Systems and Fields
- ENGS 24 Science of Materials
- ENGS 25 Introduction to Thermodynamics
- ENGS 26 Control Theory
- ENGS 27 Discrete and Probabilistic Systems

Gateway course (choose 1 course)
Electrical
- ENGS 31 Digital Electronics
- ENGS 32 Electronics: Introduction to Linear and Digital Circuits

Mechanical
- ENGS 33 Solid Mechanics
- ENGS 34 Fluid Dynamics

Chemical/Biochemical
- ENGS 35 Biotechnology and Biochemical Engineering
- ENGS 36 Chemical Engineering

Engineering course (choose 1 course)
- ENGS 56 Introduction to Biomedical Engineering OR 1 additional course from ENGS 23–26

Biology courses (choose 2 courses)
- BIOL 12 Cell Structure and Function
- BIOL 13 Gene Expression and Inheritance
- BIOL 14 Physiology

Chemistry courses (2 courses)
- CHEM 51–52 Organic Chemistry OR CHEM 57–58 Organic Chemistry

Elective (choose 1 course)
- Engineering sciences course numbered above ENGS 23
- BIOL 40 (formerly BIOL 77) Biochemistry
- CHEM 41 Biological Chemistry

* A culminating experience is required. It may be an independent project or honors thesis, Engineering Sciences 86 or 88, or one of the following courses in biotechnology or biomedical engineering, Engineering Sciences 160, 161, 162, 165, or 167