

State University of New York at Binghamton  
Thomas J. Watson College of Engineering and Applied Science  
**BS in Biomedical Engineering Four-Year-Program**

Application Code: 274  
(If undecided use: 0229)

**FALL 2024**

**Engineering Design Divisi**

## **Biomedical Engineering with MCAT Preparation**

### **FALL 2024**

#### **Year 1**

#### **Engineering Design Division**

*(The freshman year is common to all engineering majors)*

#### **Fall**

MATH 224/225 Calculus I (M)  
CHEM 111 Chemical Principles (L)  
EDD 111 Introduction to Engineering Design  
EDD 103 Engineering Communications I  
General Education Elective (A, D, G, N)

Body/Wellness

#### **Spring**

MATH 226/227 Calculus II (MATH 225)  
PHYS 131 General Physics I Calculus-based (MATH 225)  
EDD 112 Introduction to Engineering Analysis (J) (EDD 111)  
EDD 104 Engineering Communications II (EDD 103)  
BIOL 113 Intro to Cell & Molecular Biol, or  
General Education Elective (A, D, G, N)

Body/Wellness

#### **Fall**

BME 201 Introduction to Biomedical Engineering  
(MATH 225, PHYS 131, EDD 112) (Co-req: BIOL 113)  
MATH 324 Ordinary Differential Equations  
(MATH 227)  
CHEM 231 Organic Chemistry I (CHEM 111)

#### **Year 2**

#### **Spring**

BME 203 Biomedical Modeling & Numerical Methods  
(MATH 227, BME 201)  
BME 213 Biomolecule Engineering  
(BIOL 113, BME 201, CHEM 111, MATH 324)  
MATH 323 Calculus III (MATH 227)  
PHYS 132 General Physics II Calculus-based (PHYS 131)  
Pre-Med Elective\*

ANTH 240 offered online in summer and winter only (**2 credits**)

#### **Fall**

BME 318 Biomechanics (PHYS 131, MATH 227)  
BME 324 Biomedical Instrumentations (L)

#### **Year 3**

#### **Spring**

BME 303 Bio-Fluid Mechanics (BME 318, PHYS 131, MATH 227)  
BME 340

\*\* Students who are planning on taking the MCAT, must choose two additional BME depth electives from any of the other BME concentration.

### **BME Major Concentrations:**

Students are required to select an area of emphasis to gain more in-depth knowledge and specialty training in biomedical engineering. Students must take any two courses from the list of courses prescribed in each concentration to declare their concentration. Courses chosen from a concentration fulfill the BME Depth Electives.

**Biomaterials and Bio-pharmaceutical Technology Concentration** (Choose two courses to declare this concentration)

- BME 486 Neuroengineering (Spring) (BME 201)
- BME 483 Tissue Engineering (Fall) (BME 313, BME 201, BIOL 113) (Co-req: BME 433)
- BME 473 Advanced Biomaterials and Biocompatibility (Spring) (BME 313)