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

Year 2

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)

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**)

Year 3

Fall

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

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)