



# VANDERBILT School of Engineering

## Biomedical Engineering Curriculum (2024-2025 Catalog Year) 127 hours (minimum)

### 1. Mathematics (15 hours)

MATH 1300	Accelerated Single-Variable Calculus I (4 hours) F/S
MATH 1301	Accelerated Single-Variable Calculus II (4 hours) F/S
MATH 2300	Multivariable Calculus (3 hours) F/S
MATH 2400	Differential Equations with Linear Algebra (4 hours) F/S

### 2. Basic Science (20 hours)

CHEM 1601+1601L	General Chemistry I + Laboratory (4 hours) F
CHEM 1602+1602L	General Chemistry II + Laboratory (4 hours) S
PHYS 1601 + 1601L	General Physics I + Laboratory (4 hours) F/S
PHYS 1602+ 1602L	General Physics II + Laboratory (4 hours) F/S
BSCI 1510+1510L	Molecules and Cells + Biological Sciences Laboratory (4 hours) F

### 3. Engineering Fundamentals (6 hours)

ES 1401-1403	Introduction to Engineering (3 hours) F
CS 1101 or 1103	Introductory Programming (3 hours) F/S

### 4. Electrical Engineering (3 hours)

ECE 2112	Circuits I (3 hours) F/S
----------	--------------------------

### 5. Biomedical Engineering (38 hours)

BME 2100	Biomechanics (3 hours) F/S
BME 2301	Systems Physiology I (3 hours) F/S
BME 2302	Systems Physiology II (3 hours) F/S
BME 2400	Quantitative Methods I: Statistical Analysis (3 hours) F/S
BME 2900W	Biomedical Engineering Laboratory I (1 hour) F/S
BME 3000	Physiological Transport Phenomena (3 hours) F/S
BME 3301	Biomedical Instrumentation I (4 hours) F/S
BME 3302	Biomedical Instrumentation II (4 hours) F/S
BME 3400	Quantitative Methods II: Signals and Modelling (3 hours) F/S
BME 3500	Biomedical Materials (3 hours) F/S
BME 3900W	Biomedical Engineering Laboratory II (1 hour) F/S
BME 4901W	Biomedical Engineering Laboratory III (1 hour) F/S
BME 4950	Design of Biomedical Engineering Systems I (2 hours) F
BME 4951	Design of Biomedical Engineering Systems II (3 hours) S
BME 4959	Senior Engineering Design Seminar (1 hour) F

### 6. Biomedical Engineering Electives (12 hours)

### 7. Technical Electives (9 hours)

### 8. Liberal Arts Core (18 hours)

### 9. Open Electives (6 hours)

Courses excluded from the listings in the Liberal Arts Core may be taken as open electives.

**Note:** [The VU Undergraduate Catalog](#) is the definitive source for all degree requirements. If there are differences between this document and the catalog, then the catalog will prevail.



# VANDERBILT School of Engineering

## Biomedical Engineering Prerequisites and Corequisites (2024-2025 Catalog Year)

### 1. Mathematics (15 hours)

MATH 1300	None.
MATH 1301	MATH 1300 or MATH 1201
MATH 2300	MATH 1301 or MATH 2200
MATH 2400	Prerequisite or corequisite: MATH 2300

### 2. Basic Science (20 hours)

CHEM 1601+1601L	None.
CHEM 1602+1602L	CHEM 1601; CHEM 1601L
PHYS 1601 + 1601L	Prerequisite or corequisite: MATH 1200 or MATH 1300
PHYS 1602+ 1602L	Prerequisite or corequisite: MATH 1201 or MATH 1301
BSCI 1510+1510L	Prerequisite or Corequisite: CHEM 1601

### 3. Engineering Fundamentals (6 hours)

ES 1401-1403	None.
CS 1101 or 1103	None.

### 4. Electrical Engineering (3 hours)

ECE 2112	Corequisites: MATH 2300; PHYS 1602
----------	------------------------------------

### 5. Biomedical Engineering (38 hours)

BME 2100	PHYS 1601; MATH 1301; CS 1101 or CS 1103 or CS 1104
BME 2301	CS 1101 or CS 1103 or CS 1104. Corequisites: BSCI 1510; PHYS 1602
BME 2302	CS 1101 or CS 1103 or CS 1104; PHYS 1601. Corequisites: BSCI 1510; PHYS 1602
BME 2400	MATH 2300. Corequisite: CS 1101 or CS 1103 or CS 1104
BME 2900W	CS 1101 or CS 1104 or CS 1103. Corequisite: BME 2301
BME 3000	BME 2100; MATH 2400 or MATH 2420
BME 3301	ECE 2112. Corequisite: BME 3400
BME 3302	BME 3301 or ECE 2213, ECE 2213L or ECE 2214, ECE 2112L
BME 3400	CS 1101 or CS 1103 or CS 1104; MATH 2400. Corequisite: BME 2400
BME 3500	CHEM 1602; PHYS 1601
BME 3900W	BME 2900W. Corequisites: BME 2100; BME 2302
BME 4901W	BME 2400; BME 3900W
BME 4950	Corequisite: BME 3302
BME 4951	BME 4950
BME 4959	Senior Standing. Corequisite: BME 4950

### 6. Biomedical Engineering Electives (12 hours)

### 7. Technical Electives (9 hours)

### 8. Liberal Arts Core (18 hours)

### 9. Open Electives (6 hours)

Courses excluded from the listings in the Liberal Arts Core may be taken as open electives.

**Note:** [The VU Undergraduate Catalog](#) is the definitive source for all degree requirements. If there are differences between this document and the catalog, then the catalog will prevail.