



VANDERBILT School of Engineering

Biomedical Engineering Curriculum (2023-2024 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	Introduction to 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
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5. Biomedical Engineering (38 hours)

BME 2100	Biomechanics (3 hours) F/S
BME 2301 (2001)	Systems Physiology I (3 hours) F/S
BME 2302 (2002)	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.



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Biomedical Engineering Prerequisites and Corequisites (2023-2024 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 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
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5. Biomedical Engineering (38 hours)

BME 2100	PHYS 1601; MATH 1301; CS 1101 or CS 1103 or CS 1104
BME 2301 (2001)	CS 1101 or CS 1103 or CS 1104. Corequisites: BSCI 1510; PHYS 1602
BME 2302 (2002)	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 and 2213L
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 2301 (2001); BME 2302 (2002)
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.