

BIOMEDICAL ENGINEERING *STANDARD TRACK-FALL 2026*

1

BMEN 1025 (4)
Computer-Aided Design
& Fabrication

CHEN 1201 (4)
Gen Chem for Engineers

BIEN 2810 (3)
Biology for Engineers

APPM 1350 (4)
Calculus 1 For Engineers

2

BMEN 1000 (1)
Explore BME
Spring Only

CHEN 1203 (2)
Gen Chem for Engineers 2
(PR: CHEN 1201 or CHEM 1113)
(CR: CHEN 1221)

CHEM 1221 (1)
Eng. Gen Chem Lab
(PR: CHEN 1201 or CHEM 1113)(CR: CHEN 1203)

PHYS 1110 (4)
General Physics 1
(CR: APPM 1350)

Humanities & Social Science (3)
Lower Division

APPM 1360 (4)
Calculus 2 For Engineers
(PR: APPM 1350 or APPM 1345)

3

BMEN 2100 (3)
Biomedical Principles
and Methods
(PR: APPM 1350, BIEN 2810
CHEN 1201, PHYS 1110)

Humanities & Social Science (3)
Lower Division

Humanities & Social Science (3)
Lower Division

PHYS 1120 (4)
General Physics 2
(PR: PHYS 1110) (CR: APPM 1360)

APPM 2350 (4)
Calculus 3 For Engineers
(CR: APPM 1360)

4

BMEN 2010 (3)
Biomaterials
(PR: CHEN 1201)
Spring Only

Free Elective (3)

CHEN 1310 (3)
Intro to Engineering
Computing
(CR: Calculus 1)

PHYS 1140 (1)
Experimental Physics
(CR: PHYS 1120)

MCEN 2023 (3)
Statics & Structures
(PR: APPM 1360, PHYS 1110)

APPM 2360 (4)
Linear Algebra &
Differential Equations
(PR: APPM 1360)

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BMEN 4117 (3)
Anatomy & Physiology for
Biomedical Engineering
(PR: BMEN 2100)
(RPR: BMEN 2010)
Fall Only

BMEN 3010 (3)
Biotransport
(PR: BMEN 2100, CHEN 1310,
PHYS 1110)
(CR: APPM 2360)
Fall Only

Writing Requirement(3)

Humanities & Social Science (3)
Upper Division

ECEN 2250 (3)
Intro to Circuits &
Electronics
(PR: APPM 1360, PHYS 1120) (CR:
APPM 2360 or MATH 3430)

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BMEN 3030 (4)
Bioinstrumentation
(PR: BMEN 2100, ECEN 2250)
Spring Only

General Technical Elective (3)
Upper Division

General Technical Elective (3)
Upper Division

CHEN 3010 (3)
Applied Data Analysis
(PR: APPM 2360, CHEN 1310)

ECEN 3301 (3)
Biomedical Signals
& Systems
(PR: ECEN 2250)
Spring Only

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BMEN 4010 (3)
BME Design 1
(PR: BMEN 1025, BMEN 2010,
BMEN 3010)
(CR: Writing)
Fall Only

Focus Technical Elective (3)
Upper Division

General Technical Elective (3)
Upper Division

Engineering Technical Elective (3)
Lower or Upper Division

Engineering Technical Elective (3)
Lower or Upper Division

Free Elective (3)

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BMEN 4020 (3)
BME Design 2
(PR: BMEN 4010)
Spring Only

Focus Technical Elective (3)
Upper Division

Engineering Technical Elective (3)
Upper Division

Humanities & Social Science (3)
Upper Division

Free Elective (3)

Example
COURSE NUMBER (Cr.)
Course Name
(PR: Pre-Requisites)
(CR: Co-Requisites)
(RPR: Recommended Pre-Requisite)
(RCR: Recommended Co-Requisite)

Biomedical Engineering Standard Track Curriculum

Notable Course Substitutions for Standard Track

- APPM 1350: MATH 1300, APPM 1340 and APPM 1345
- APPM 1360: MATH 2300
- APPM 2350: MATH 2400
- APPM 2360: MATH 2130 and MATH 3430 (taken as a sequence)
- BMEN 1025: MCEN 1025; GEEN 1017 or BMEN 1020 and BMEN 1035; MCEN 1026 and MCEN 2026
- BMEN 4117: BMEN 5117, MCEN 4117 or 5117
- CHEM 1221: CHEM 1114, CHEM 1134
- CHEN 1201: CHEN 1211 (CHEM 1113 approved for transfer students)
- CHEN 1203: CHEN 1211 (CHEM 1133 approved for transfer students)
- CHEN 1310: CSCI 1300 (CS Minors Only)
- BIEN 2810: MCDB 1150, EBIO 1210 and 1220 (Taken as a sequence)
- CHEN 3010: STAT 4000 (CS Minors Only)
- MCEN 2023: CVEN 2121, GEEN 2851

Technical Electives

Standard Track requires a total of 24 credits of Technical Electives. Visit the program's [Curriculum webpage](#) for options.

Focus Electives

6 credits of technical electives must be taken from the Focus Elective list. Please consult the BME Curriculum website for a current list of options.

Specializations (see right):

Students are recommended to use 12 elective credits towards a specialization.

Humanities & Social Science Electives

[Humanities, Social Sciences, and Writing Requirements](#) for options

Writing Requirement Options

- ENES 1010 (freshmen only), ENES 2000, ENES 3100
- WRTG 3030, WRTG 3035
- PHYS 3050
- ENLP 3100 (previous success in an ENLP course highly recommended)

Grade Requirements

The minimum passing grade for a prerequisite or co-requisite course within the biomedical engineering curriculum is a C-. This requirement includes courses completed in another program or department (APPM, PHYS, etc.). The minimum passing grade for standalone classes is a D-. In addition, students need to have a cumulative and major GPA of at least 2.000 in order to graduate from the College of Engineering. Pass/Fail is only permitted for BMEN 1000 and Free Elective credits.

BME Standard Track Specializations

Students following the BME standard track are recommended to take **4 of their elective courses** in one of the following specialties to develop content depth for the major. Other courses can be considered; however, these courses have been reviewed by the Program for relevant content and are approved as focused electives. Reach out to your advisor about other courses.

Bioinstrumentation: Recommended Courses

ECEN 4111 – Eng. App. in Biomedicine: Cardiovascular Devices...
ECEN 4121 – Design of Implantable Med. Dev.: Neuromodulation
ECEN 4933 – Engineering Genetic Circuits
ECEN 4006 – Special Topics -Biomedical Optics
MCEN 4127 – Biomedical Ultrasound
MCEN 4228 – Special Topics - Biohybrid Robotics
MCEN 4228 – Special topics: Electromechanical Biomaterial

Biomechanics: Recommended Courses

MCEN 4110 – Reg Med & Tissue Repair
MCEN 4113 – Mechanics of Cancer (1)
MCEN 4127 – Biomedical Ultrasound
MCEN 4133 – Intro to Tissue Biomechanics (2)
MCEN 4157 – Modeling Human Movement
MCEN 4171 – Biofluids on Microscale (3)
MCEN 4228 – Special Topics: Biohybrid Robotics
MCEN 4228 - Advanced Biotransport
MCEN 4228 – Fluid Mechanics in the Human Body
(1) prereq MCEN 2063 or 3021 ; (2) prereq MCEN 2063 ;
(3) prereq MCEN 3021 or CHEN 3200

Biotherapeutics: Recommended Courses

BIEN 3800 – Fundamentals of Biotechnology
BIEN 4802 – Tissue Engineering & Biofabrication
BIEN 4803 – Metabolic Engineering (1)
BIEN 4806 – Immunoengineering
BIEN 4807 – Drug Delivery
ECEN 4006 – Special Topics: Biomedical Optics
MCEN 4110 – Reg Med & Tissue Repair
BMEN 4519 – BME Lab Foundations
(1) prereq BCHM 4611 may be waived

Resources

Pre-Medical

Pre-Health Advising can help with:

- Understanding Medical School Requirements
- MCAT Preparations
- PA/MD/DO distinctions
- More!

[Visit OPHA's website for more.](#)

Career Services

Career Services can help with:

- Resume/ Cover Letters
- Using the Handshake Portal
- Interview skills
- More!

[Visit their website for more.](#)

Clubs and Organizations

[Biomedical Engineering Society](#)



[Engineers without Borders](#)



[Engineering World Health](#)



Effective: Fall 2026