

Biomedical Engineering Undergraduate Curriculum

Fall 2020

<u>College of Engineering Core Requirements</u>	<u>Credit Hours</u>
Math 115, 116, 215, 216, Calculus I-IV	16
Engineering 100, Intro to Engineering	4
Engineering 101, Intro to Computing	4
Chemistry 125, 126, 130, Intro to Chemistry	5
Physics 140/141, General Physics I	5
Physics 240/241, General Physics II	5
Intellectual Breadth	16
<u>Total</u>	55

Life, & Materials Science Engineering

Biology 172 or 174, Intro to Biology (F,W, SS)	4
MatScie 220 or 250, Principles of Engineering Materials (F,W)	4
<u>Total</u>	8

Biomedical Engineering Core Requirements

BiomedE 211, Circuits & Systems for BME (F,W)	4
BiomedE 221, Biophysical Chemistry & Thermodynamics (F,W)	4
BiomedE 231, Intro to Biomechanics (F,W)	4
BiomedE 241, Statistics, Computation, & Data Analysis (F,W)	4
BiomedE 350, Intro to BME Design (F,W)	4
BiomedE 418, Quantitative Cell Biology (F,W)	3
BiomedE 419, Quantitative Physiology (F)	4
BiomedE 450, BME Design (W)	4

OR

BiomedE 451(F) **AND** 452 (W), BME Design, Part I & II
BiomedE 458 (F,W)

<u>Total</u>	37-38
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BME Depth Requirements	21
Unrestricted Electives	9

<u>Total</u>	128
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BME Depth Requirements

Depth Requirements consist of 21 credit hours, which must satisfy criteria in the following three areas:

Engineering Expertise (12 credits)

- 12 credits of engineering courses
- At least 6 credits must be BME courses
- All courses must be at the 300 level or higher
- Seminar courses and independent research do NOT fulfill this requirement
- Some BME 499 courses may count but must be approved by petition to the BME Undergraduate Education Committee (UEC)

Cross-Disciplinary Requirements (STEM, 6 credits)

- 6 credits of courses in science, engineering, math, or related technical field (e.g. Entrepreneurship, Bioinformatics, Movement Science, Med School Department)
- Courses must be at the 200 level or higher
- Science courses must be designated as natural science (NS) in the LSA Course Guide
- Up to 1 credit of seminar may count
- Courses taken under Engineering Expertise and Experiential Electives that exceed the minimum requirements (i.e. 12 credits and 3 credits, respectively) may count; credits may be split (e.g. a 4 credit lab may have 3 credits count for the Experiential Elective and 1 credit for Advanced STEM)

Profession in Practice (3 credits)

- 3 credits of a course that is primarily hands-on or experiential learning (e.g. lab, design, practicum, or research)
- Courses must fall under science, engineering, entrepreneurship or computation
- BME 499: BME-in-Practice, BME 499: Clinical Observation and Needs Finding, Multidisciplinary Design Program (up to 3 credits) and some Entrepreneurship courses satisfy this requirement
- Up to 2 credits of BME 452 (Biomedical Design II) may count towards this requirement
- Independent Research (e.g. BME 490 or UROP) may count if it is science or engineering-focused. Approval must be received by petition to the BME Undergraduate Education Committee (UEC)

Courses cannot be taken Pass/Fail. Students must earn a C- or better in all courses. Elected courses cannot have substantial overlap with other BME core courses or others taken to satisfy the requirements (e.g. EECS 314 overlaps with BME 211 and will not count as a Depth Requirement).