

# Biomedical Engineering (BME) Concentration

## Student Enrollment Approval

The Biomedical Engineering (BME) Concentration is offered to students who wish to expand their education on medical applications of bioengineering, including biomedical device development and tissue engineering. Students interested in the concentration can either apply as an incoming student or after they are admitted to the university.

The BME concentration consists of a set of eight Biomedical Engineering Foundation Core courses (16 credits), one Biomedical Engineering Core course (3 credits), and two elective courses (6 credits) chosen from an approved list of either Cell & Tissue Engineering or Medical Devices & Manufacturing. Students in the BME concentration will also choose a related senior capstone design project. In order to graduate with the concentration, students must have a 2.000 bioengineering major GPA and a 2.700 BME GPA. See the back page for a detailed list of the BME courses.

Student Name (Print): \_\_\_\_\_

Student Signature: \_\_\_\_\_

Student ID: \_\_\_\_\_ Date: \_\_\_\_\_

Faculty Advisor Signature: \_\_\_\_\_

Department Chairperson's Signature: \_\_\_\_\_

## Biomedical Engineering (BME) Concentration Courses

List A Biomedical Engineering Foundation Core: Eight required courses (16 credits)

Course	Credits	Title
BNG 255+232	3+1	Biology for Engineers & Fundamental Engineering Biology Lab
BNG 321+322	3+1	Quantitative Physiology & Lab
BNG 318+320	3+1	Biomeasurement and Control & Lab
BNG 428	3	Medical Device Regulations and Regulatory Strategies
BMB 571	1	Ethical Issues in Biomedical Research

List B Biomedical Engineering Elective Core<sup>1</sup>: Choose 1 course (3 credits)

Course	Credits	Title
BNG 415	3	Implantable Structures and Sensors
BNG 416	3	Biomedical Devices
BNG 421	3	Cell and Tissue Engineering

Themed Lists: Choose at least 2 courses from either “C” or “D” (6 credits)

List C – Cell and Tissue Engineering

Course	Credits	Title
BNG 412	3	Molecular Bioengineering
BNG 417	3	Nanotechnology in Bioengineering Systems
BNG 418	3	Biological Interactions on Material Surfaces
BNG 420	3	Case Studies in Bioengineering
BNG 421	3	Cell and Tissue Engineering
BNG 424	3	Human Organogenesis
BIO 422	3	Immunology

List D – Medical Devices and Manufacturing

Course	Credits	Title
BNG 415	3	Implantable Sutures and Sensors
BNG 416	3	Biomedical Devices
BNG 418	3	Biological Interactions on Material Surfaces
ECE 403	3	Special Topics in Electrical Engineering - Medical Ultrasonics
MNE 476	3	Manufacturing and Quality Control
MNE 482	3	Robotics

Any other exceptions will require the approval of the Concentration Coordinator/Department Chair.

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<sup>1</sup> Courses in List B that appear in List C or D do not double count.