Biomedical Engineering

Phone: 314-935-7208
Website: https://bme.wustl.edu/academics/undergraduate-programs/index.html

Minors

A number of undergraduate engineering students pursue a minor in engineering or in another discipline, such as business. For biomedical engineering (BME) majors, there are four engineering minors that are easily obtainable within the typical four-year BME curriculum. These recommended minors require four or fewer additional courses, most of which count toward the electives within the BME major.

Recommended Engineering Minors for Biomedical Engineering Majors

• **Bioinformatics**: Bioinformatics is a joint program of the Department of Computer Science & Engineering in the McKelvey School of Engineering and the Department of Biology in the College of Arts & Sciences. Mindful of the emerging opportunities at the interface of biology and computer science, the departments of Biology and of Computer Science & Engineering are sponsoring a bioinformatics minor that will serve students from both departments as well as other students from the natural sciences and engineering with an interest in this field.

• **Biomedical Data Science**: This program is designed to integrate data science principles — preparing, transforming, modeling, visualizing, validating, and communicating data — with the unique challenges and considerations of medicine and health care. The curriculum encompasses the following: (1) fundamental mathematics concepts such as linear algebra, probability, statistics, and computer modeling; (2) specialized data science education necessary to practically approach the particular challenges of genomic data, sensor data, and health care data; and (3) learning the ethical considerations of privacy, equity, and access unique to medical data sharing and analysis.

• **Computer Science**: Because computing drives innovation in nearly all industries, the Department of Computer Science & Engineering offers a minor in computer science to provide a basic foundation in software and computer science.

• **Electrical Engineering**: This program covers classes in several fields of science and engineering by encompassing electronics, solid-state devices, applied electromagnetics, radiofrequency and microwave technology, fiber-optic communication, applied optics, nanophotonics, sensors, and medical and biological imaging technology.

• **Mechanical Engineering**: The minor in mechanical engineering complements studies in a field related to mechanical engineering, such as biomedical engineering, electrical engineering, physics, chemistry or architecture. The minor is intended to provide students with a credential that could enhance their opportunities for employment or graduate study.

McKelvey School of Engineering offers additional minors; however, they typically require 15 units or more of course work outside the standard BME curriculum. Students who enter with significant transfer credit and/or advanced placement credit may be able to complete these minors in the standard four years. Otherwise, students will typically require a summer semester or two to complete these minors.

Engineering Minors Requiring Advanced Placement or Summer Effort for Biomedical Engineering Majors

• **Aerospace Engineering** (http://bulletin.wustl.edu/undergrad/engineering/mechanical-engineering-materials-science/minor-aerospace/)

• **Energy Engineering** (http://bulletin.wustl.edu/undergrad/engineering/energy-environmental-chemical/minor-energy/)

• **Environmental Engineering Science** (http://bulletin.wustl.edu/undergrad/engineering/energy-environmental-chemical/minor-environmental/)

• **Mechatronics** (http://bulletin.wustl.edu/undergrad/engineering/mechanical-engineering-materials-science/minor-mechatronics/)

• **Nanoscale Science & Engineering** (http://bulletin.wustl.edu/undergrad/engineering/energy-environmental-chemical/minor-nanoscale/)

• **Robotics** (http://bulletin.wustl.edu/undergrad/engineering/mechanical-engineering-materials-science/minor-robotics/)

• **Systems Science & Engineering** (http://bulletin.wustl.edu/undergrad/engineering/electrical-and-systems/minor-systems/)