BIOMEDICAL ENGINEERING (BME)

BME 7000 Biomedical Engineering Seminar 0 cr
The goal of this course is to train students with research methods and scientific presentations as well as providing exposure to the top research achievements in Biomedical Engineering (BME). In this bi-weekly seminar course, both students and established researchers will present on BME research topics. Course graded pass/fail.

BME 7012 Foundation of Physiology 2 cr
The goal of this course is to introduce human physiology for engineering students with no background in physiology. The offers the foundation of function and regulation of the systems and major organs of the human body.

BME 7022 Biomedical Instrumentation 2 cr
The goal of this course is to introduce the basics of biomedical instrumentation to students with no background in engineering. The course offers basics of electrical circuits, design of instrumentation amplifiers using EMG as an example, signal digitization and electrical safety of medical devices.

BME 7024 Basics of Electromagnetic 2 cr
The goal of this course is to introduce the basics of electromagnetic principles to students with no background in engineering. It will offer lectures on electrostatics, electric fields in matter, magnetostatics, electrodynamics, and Poynting's theorem.

BME 7026 Basics of Biological Signal Analysis 2 cr
The goal of this course is to introduce the basics of biological signal analysis to students with no background in signal processing. The course offers classification of signals and systems, stochastic nature of biological signals, Fourier Transform of signals, and power spectral analysis.

BME 7028 Basics of Biomechanics 2 cr
The goal of this course is to introduce the basics of biomechanics to students with no background in engineering. The course offers basics of mechanical and anatomical analysis of human movement, principles of human motor performance and motor learning and applications on rehabilitation.

BME 7040 Biomedical Ethics 0 cr
The goal of this course is to introduce the ethical issues encountered in biomedical research. The course presents several actual examples and offers the fundamental ethical rules of any biomedical research. This course is graded on a pass/fail basis.

BME 8990 Current Research Topics in Biomedical Engineering 3 cr
A discussion of current topics in biomedical engineering. The latest in instrumentation, procedures and practices relevant both to clinical engineering and ongoing research are covered.
PR/CR: A minimum grade of C is required unless otherwise indicated.
Prerequisite: Consent of instructor.