Biomedical Specialization

The biomedical specialization provides engineers with knowledge of human anatomy and physiology to enhance the understanding of the role to be played by engineers in specific areas within biomedical engineering such as rehabilitation engineering, clinical engineering, medical imaging, and orthopaedics.

Students who obtain a grade of "C" or better in the courses listed below will receive a notation of "Biomedical Specialization" on their transcript at the time of graduation.

Group A: Science Electives (choose both courses)
BIOL 1410 Human Anatomy
BIOL 1412 Physiology of the Human Body

Group B: Biosystems Engineering Design Electives (choose 3 from the list)
BIOE 4414 Imaging and Spectroscopy for Biosystems
BIOE 4610 Design of Assistive Technology Devices
BIOE 4640 Bioengineering Applications in Medicine
BIOE 4650 Textiles in Healthcare and Medical Applications

Group C: Complementary Studies (choose 2 from the list)
ENG 1900 Occupational Health and Safety Awareness
ENVR 3400 Introduction to Environment and Health
HIST 4660 History of Health and Disease (6) (counts as 2)
HIST 4680 Social History of Health and Disease in Modern Canada (6) (counts as 2)
HNSC 1210 Nutrition for Health and Changing Lifestyles
INDG 3240 Indigenous Medicine and Health
KPER 1200 Physical Activity, Health and Wellness
PHIL 2740 Ethics and Biomedicine (or PHIL 2741 Éthique et biomédicine)

Group D: Free Electives (choose 2 from the list)
(Note: additional courses from Group B or C can be used to fulfill Group D electives.)
BIOL 2410 Human Physiology 1
BIOL 2420 Human Physiology 2
BIOL 4470 Physiology of Excitable Cells
CHEM 2100 Organic Chemistry 1: Foundations of Organic Chemistry
CHEM 2700 Biochemistry 1: Biomolecules and an Introduction to Metabolic Energy
CHEM 2710 Biochemistry 2: Catabolism, Synthesis, and Information Pathways
ECE 4610 Biomedical Instrumentation and Signal Processing
KPER 2330 Biomechanics
KIN 4330 Advanced Biomechanics
MECH 4322 Design of Biomechanical Devices
MECH 4832 Biomaterials in Biomedical Engineering
PHYS 3220 Medical Physics and Physiological Measurement
PHYS 4400 Linear Systems for Imaging

Note: Special permission may be granted by the Head of Department for courses not appearing on the list for Group C or Group D.