

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 1 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 biomédecine)

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.