Western Engineering

Chemical Engineering and Biomedical Engineering

September 2025 (for students who entered *first year* in 2023 or later)

Year 2
Term A

NMM 2270A/B	Applied Mathematics for Engineering II
BME 3201A/B	Fundamentals of Biomedical Engineering Design
CBE 2206A/B	Industrial Organic Chemistry I
CBE 2214A/B	Engineering Thermodynamics
CBE 2220A/B	Chemical Process Calculations
CBE 2290A/B	Fundamentals of Biochemical and Environmental Eng.

Term B

NMM 2277A/B	Applied Mathematics for Chemical & Civil Engineering III
CBE 2207A/B	Industrial Organic Chemistry II
CBE 2221A/B	Fluid Flow
CBE 2224A/B	Chemical Engineering Thermodynamics
CBE 2291A/B	Computational Methods for Engineering
SS 2143A/B	Applied Statistics and Data Analysis for Engineers

Year 3
Term A

Biol 1001A	Biology for Science I
CBE 3307A	Energy and Environment
CBE 3315A	Reaction Engineering
CBE 3322A	Heat Transfer Operations
CBE 3318A	Introduction to Chemical Process Simulation
CBE 3395Y	Chemical Engineering Lab
One 0.5-credit non-technical elective *	

Term B

Biol 1002B	Biology for Sciences II
CBE 3310B	Process Dynamics and Control
CBE 3324B	Mass Transfer Operations
CBE 3319B	Introduction to Plant Design and Safety
CBE 3323B	Staged Operations
CBE 3395Y	Chemical Engineering Lab
CBE 3316B	Sustainable Chemical Engineering & Life Cycle Analysis

Year 4
Term A

Biochem 2280A	Biochemistry and Molecular Biology
BME 3301A	Neural Systems Engineering
ECE 4455A	Biomedical Systems Analysis
Physiol 2130	Human Physiology
One 0.5-credit Biomedical Science elective	
One 0.5-credit Healthcare non-technical elective	

Non-technical Electives
Students are required to complete 1.5 credits of non-technical electives as part of the program.
a) *The first 0.5 credit can come from the approved non-technical elective list (https://www.eng.uwo.ca/undergraduate/upper-year/electives.html).
b) The remaining 1.0 credits must come from the following Healthcare Non-technical Elective list.

Students must pay attention when selecting the first 0.5 credit to ensure appropriate prerequisite courses are completed for the non-technical electives below.

Healthcare Non-technical Electives

Anthropology 2290A/B	Cultures of Health and Healing
Anthropology 2240A/B	Evolution, Ecology & Human Health
Economics 2169F/G	Economics of Health Care
History 2195A/B	Epidemics in North America
History 2818F/G	Plague and Death from Antiquity to the 18th Century
History 2819 F/G	How Epidemics Change the Way We Live
Law 3101A/B	Healthcare Law
Philosophy 2071E	Biomedical Ethics
Philosophy 2272F/G	Bioethics and Disability
Philosophy 2715F/G	Health Care Ethics
Psychology 2036A/B	The Psychology of Physical Health and Illness
Psychology 2135A/B	Cognitive Psychology
Political Science 2276F/G	The Politics of Health Care
Religious Studies 2239F/G	Christian Bioethics
Sociology 2179A/B	Promotion of Community Health
Sociology 2180A/B	Development of Health Inequalities
Women's Studies 2244	Women and Health

Technical Elective List:
Some technical electives may not be offered in a given academic year. Consult the Department for accurate listing. Courses that do not appear on the list below require special permission from the Department.

Biomedical Sciences Electives

Anatomy and Cell Biology 2200A/B	Systemic Anatomy of the Human Body
Biochemistry 3385A/B	Human Biochemistry
Biochemistry 3386A/B	Clinical Biochemistry
Biology 2382A/B	Cell Biology

Term B

BME 3303B	Cellular Systems Engineering
MME 4469B	Biomechanics of the Musculoskeletal System
Physiol 2130	Human Physiology
Two 0.5-credit Biomedical Science electives	
One 0.5-credit Healthcare non-technical elective	
One 0.5-credit Open elective (taken in either term)**	

Year 5

Term A

BME 4400	Biomedical Engineering Research Thesis (1.5-credit course)
CBE 4421A	Introduction to Biomaterials Engineering
CBE 4497	Chemical Process and Plant Design
ELI 4110f	Engineering Ethics, Sustainable Development and the Law
One 0.5-credit CBE technical elective (https://www.eng.uwo.ca/undergraduate/upper-year/next.html)	

Term B

BME 4400	Biomedical Engineering Research Thesis (1.5-credit course)
CBE 4497	Chemical Process and Plant
ELI 3100A or ELI 3000A or ELI 4200B or ELI 4400 or	Planning and Project Management or Managing the Innovation Process or The Entrepreneurial Environment or Strategic Innovation Commercialization
Two 0.5-credit BME technical electives	
One 0.5-credit CBE technical elective (https://www.eng.uwo.ca/undergraduate/upper-year/next.html)	

Biology 2581A/B	Genetics
Chemistry 2213A/B	Organic Chemistry
Chemistry 2223A/B	Organic Chemistry of Biological Molecules
Communication Sciences and Disorders 4417A/B	Hearing Science
Health Science 2300A/B	Systemic Approach to Functional Anatomy
Health Science 3300A/B	Anatomy of the Human Body
Kinesiology 2000A/B	Physical Activity and Health
Medical Science 4931F/G	Selected Topics in Medical Science
Medical Biophysics 4700B	Case Studies in Medical Biophysics
Medical Biophysics 4730A	Disease Biomarkers and Precision Medicine
Physiology 3140A/B	Cellular Physiology
Psychology 2220A/B	Intro. to Behavioural & Cognitive Neuroscience

Biomedical Engineering (BME) Electives

CBE 4423A/B	Tissue Engineering
CBE 4422A/B	Nanobiotechnology
Medical Biophysics 3330F/G	Human Biomechanics with Biomedical Applications
Medical Biophysics 3518B	Introduction to Molecular Imaging
Medical Biophysics 3720A	In Vivo Medical Imaging
Medical Biophysics 3820B	Photonics in Medicine and Biology
Medical Biophysics 4720A	Applied Medical Imaging

**Open Electives
For the course credit designated as an "open elective", students may select any course from the lists of: Biomedical Science electives; BME technical electives; CBE technical electives; Healthcare non-technical electives; or Faculty of Engineering approved non-technical electives.