

## Chemical Engineering and Biomedical Engineering

September 2026

<b>Year 2</b> <b>Term A</b> <table border="1"> <tbody> <tr> <td>NMM 2270A/B</td> <td>Applied Mathematics for Engineering II</td> </tr> <tr> <td>BME 3201A/B</td> <td>Fundamentals of Biomedical Engineering Design</td> </tr> <tr> <td>CBE 2206A/B</td> <td>Industrial Organic Chemistry I</td> </tr> <tr> <td>CBE 2214A/B</td> <td>Engineering Thermodynamics</td> </tr> <tr> <td>CBE 2220A/B</td> <td>Chemical Process Calculations</td> </tr> <tr> <td>CBE 2290A/B</td> <td>Fundamentals of Biochemical and Environmental Eng.</td> </tr> </tbody> </table>		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.	<b>Non-technical Electives</b> 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 ( <a href="https://www.eng.uwo.ca/undergraduate/upper-year/electives.html">https://www.eng.uwo.ca/undergraduate/upper-year/electives.html</a> ). b) The remaining 1.0 credits must come from the following Healthcare Non-technical Elective list.  <i>Students must pay attention when selecting the first 0.5 credit to ensure appropriate prerequisite courses are completed for the non-technical electives below.</i>																																				
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.																																																	
<b>Term B</b> <table border="1"> <tbody> <tr> <td>NMM 2277A/B</td> <td>Applied Mathematics for Chemical &amp; Civil Engineering III</td> </tr> <tr> <td>CBE 2207A/B</td> <td>Industrial Organic Chemistry II</td> </tr> <tr> <td>CBE 2221A/B</td> <td>Fluid Flow</td> </tr> <tr> <td>CBE 2224A/B</td> <td>Chemical Engineering Thermodynamics</td> </tr> <tr> <td>CBE 2291A/B</td> <td>Computational Methods for Engineering</td> </tr> <tr> <td>SS 2143A/B</td> <td>Applied Statistics and Data Analysis for Engineers</td> </tr> </tbody> </table>		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																																					
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																																																	
<b>Year 3</b> <b>Term A</b> <table border="1"> <tbody> <tr> <td>Biol 1001A</td> <td>Biology for Science I</td> </tr> <tr> <td>CBE 3307A</td> <td>Energy and Environment</td> </tr> <tr> <td>CBE 3315A</td> <td>Reaction Engineering</td> </tr> <tr> <td>CBE 3322A</td> <td>Heat Transfer Operations</td> </tr> <tr> <td>CBE 3395Y</td> <td>Chemical Engineering Lab</td> </tr> <tr> <td>BME 3301A</td> <td>Neural System Engineering</td> </tr> <tr> <td colspan="2">One 0.5-credit non-technical elective *</td> </tr> </tbody> </table>		Biol 1001A	Biology for Science I	CBE 3307A	Energy and Environment	CBE 3315A	Reaction Engineering	CBE 3322A	Heat Transfer Operations	CBE 3395Y	Chemical Engineering Lab	BME 3301A	Neural System Engineering	One 0.5-credit non-technical elective *		<b>Healthcare Non-technical Electives</b> <table border="1"> <tbody> <tr> <td>Anthropology 2290A/B</td> <td>Cultures of Health and Healing</td> </tr> <tr> <td>Anthropology 2240A/B</td> <td>Evolution, Ecology &amp; Human Health</td> </tr> <tr> <td>Economics 2169F/G</td> <td>Economics of Health Care</td> </tr> <tr> <td>History 2195A/B</td> <td>Epidemics in North America</td> </tr> <tr> <td>History 2818F/G</td> <td>Plague and Death from Antiquity to the 18<sup>th</sup> Century</td> </tr> <tr> <td>History 2819 F/G</td> <td>How Epidemics Change the Way We Live</td> </tr> <tr> <td>Law 3101A/B</td> <td>Healthcare Law</td> </tr> <tr> <td>Philosophy 2071E</td> <td>Biomedical Ethics</td> </tr> <tr> <td>Philosophy 2272F/G</td> <td>Bioethics and Disability</td> </tr> <tr> <td>Philosophy 2715F/G</td> <td>Health Care Ethics</td> </tr> <tr> <td>Psychology 2036A/B</td> <td>The Psychology of Physical Health and Illness</td> </tr> <tr> <td>Psychology 2135A/B</td> <td>Cognitive Psychology</td> </tr> <tr> <td>Political Science 2276F/G</td> <td>The Politics of Health Care</td> </tr> <tr> <td>Religious Studies 2239F/G</td> <td>Christian Bioethics</td> </tr> <tr> <td>Sociology 2179A/B</td> <td>Promotion of Community Health</td> </tr> <tr> <td>Sociology 2180A/B</td> <td>Development of Health Inequalities</td> </tr> <tr> <td>Women's Studies 2244</td> <td>Women and Health</td> </tr> </tbody> </table>	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 18 <sup>th</sup> 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
Biol 1001A	Biology for Science I																																																	
CBE 3307A	Energy and Environment																																																	
CBE 3315A	Reaction Engineering																																																	
CBE 3322A	Heat Transfer Operations																																																	
CBE 3395Y	Chemical Engineering Lab																																																	
BME 3301A	Neural System Engineering																																																	
One 0.5-credit non-technical elective *																																																		
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 18 <sup>th</sup> 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																																																	
<b>Term B</b> <table border="1"> <tbody> <tr> <td>Biol 1002B</td> <td>Biology for Sciences II</td> </tr> <tr> <td>CBE 3310B</td> <td>Process Dynamics and Control</td> </tr> <tr> <td>CBE 3324B</td> <td>Mass Transfer Operations</td> </tr> <tr> <td>CBE 3319B</td> <td>Introduction to Plant Design and Safety</td> </tr> <tr> <td>CBE 3323B</td> <td>Staged Operations</td> </tr> <tr> <td>CBE 3395Y</td> <td>Chemical Engineering Lab</td> </tr> <tr> <td>CBE 3316B</td> <td>Sustainable Chemical Engineering &amp; Life Cycle Analysis</td> </tr> </tbody> </table>		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	<b>Technical Elective List:</b> 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.  <b>Biomedical Sciences Electives</b> <table border="1"> <tbody> <tr> <td>Anatomy and Cell Biology 2200A/B</td> <td>Systemic Anatomy of the Human Body</td> </tr> <tr> <td>Biochemistry 3385A/B</td> <td>Human Biochemistry</td> </tr> <tr> <td>Biochemistry 3386A/B</td> <td>Clinical Biochemistry</td> </tr> <tr> <td>Biology 2382A/B</td> <td>Cell Biology</td> </tr> </tbody> </table>	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																										
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																																																	
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																																																	
<b>Year 4</b> <b>Term A</b> <table border="1"> <tbody> <tr> <td>Biochem 2280A</td> <td>Biochemistry and Molecular Biology</td> </tr> <tr> <td>ECE 4455A</td> <td>Biomedical Systems Analysis</td> </tr> <tr> <td>Physiol 2130</td> <td>Human Physiology</td> </tr> <tr> <td>CBE 3318A</td> <td>Introduction to Chemical Process Simulation</td> </tr> </tbody> </table>		Biochem 2280A	Biochemistry and Molecular Biology	ECE 4455A	Biomedical Systems Analysis	Physiol 2130	Human Physiology	CBE 3318A	Introduction to Chemical Process Simulation																																									
Biochem 2280A	Biochemistry and Molecular Biology																																																	
ECE 4455A	Biomedical Systems Analysis																																																	
Physiol 2130	Human Physiology																																																	
CBE 3318A	Introduction to Chemical Process Simulation																																																	

One 0.5-credit Biomedical Science elective
Two 0.5-credit Healthcare non-technical elective

### Term B

BME 3303B	Cellular Systems Engineering
MME 4469B	Biomechanics of the Musculoskeletal System
Physiol 2130	Human Physiology
One 0.5-credit Biomedical Science electives	
One 0.5-credit BME Technical Elective (taken in either term)	
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
ELI 3100A or ELI 3000A or ELI 4200B or ELI 4400	Planning and Project Management or Managing the Innovation Process or The Entrepreneurial Environment or Strategic Innovation Commercialization
One 0.5-credit CBE technical elective ( <a href="https://www.eng.uwo.ca/undergraduate/upper-year/next.html">https://www.eng.uwo.ca/undergraduate/upper-year/next.html</a> )	

#### 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 ( <a href="https://www.eng.uwo.ca/undergraduate/upper-year/next.html">https://www.eng.uwo.ca/undergraduate/upper-year/next.html</a> )	

Biology 2581A/B	Genetics
Chemistry 2213A/B *must take Chem 1301 as open elective first	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.