### Chemical: Biochemical and Environmental Engineering (Option B)

**September 2023** (students who entered *first year* in September 2018 or later)

#### Year 2:

**Term A**
- NMM 2270a  Applied Math for Engineering II (Formerly AM 2270A)
- CBE 2206a  Introductory Industrial Organic Chemistry
- CBE 2214a  Engineering Thermodynamics
- CBE 2220a  Chemical Process Calculations
- CBE 2290a  Fundamentals of Biochemical and Environmental Engineering
- Writing 2130f  Building Better (Communication) Bridges: Rhetoric & Professional Communication for Engineers

**Term B**
- NMM 2277b  Applied Math Chemical and Civil Engineering III (Formerly AM 2277B)
- CBE 2207b  Applied Industrial Organic Chemistry
- CBE 2221b  Fluid Flow
- CBE 2224b  Chemical Eng. Thermodynamics
- CBE 2291b  Computational Methods for Engineering
- SS 2143b  Applied Statistics and Data Analysis for Engineers

#### Year 3:

**Term A**
- CBE 3307a  Energy & Environment
- CBE 3315a  Reaction Engineering
- CBE 3318a  Introduction to Chemical Process Simulation
- CBE 3322a  Heat Transfer Operations
- CBE 3330a  Bioreaction & Bioprocess Engineering
- CBE 3396y  Biochemical Engineering Lab

**Term B**
- CBE 3310b  Process Dynamics and Control
- CBE 3316b  Sustainable Chemical Engineering & Life Cycle Analysis
- CBE 3319b  Introduction to Plant Design and Safety
- CBE 3323b  Staged Operations
- CBE 3324b  Mass Transfer Operations
- CBE 3396y  Biochemical Engineering Lab
- CBE 4404b  Downstream Processing in Pharmaceutical Manufacturing
- CBE 4413a/b  Selected Topics in Chemical Engineering
- CBE 4416a/b  Carbon Footprint Management
- CBE 4417a/b  Catalytic Processes
- CBE 4418a/b  Industrial Multiphase Reactor Design
- CBE 4420a/b  Computer Process Control
- CBE 4428a/b  Introduction to Nanoengineering
- CBE 4432a/b  Energy and Fuels Production Systems
- CBE 4485a/b  Energy and Society
- CBE 4493a/b  Polymer Engineering

**Technical Elective List:**

Some technical electives may not be offered in a given academic year. Consult the Department for accurate listing.

<table>
<thead>
<tr>
<th>General Chemical Engineering Courses</th>
<th>Biochemical and Environmental Engineering Courses</th>
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<tbody>
<tr>
<td>CBE 4404a/b  Downstream Processing in Pharmaceutical Manufacturing</td>
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<td>CBE 4494a/b  Green Fuels and Chemicals</td>
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<tr>
<td>CEE 3362a/b  Drinking Water Quality and Treatment</td>
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#### Year 4:

**Term A**
- CBE 4498  Biochemical Process and Plant Design
  - Two 0.5 Technical elective
  - Two 0.5 Non-technical elective taken from approved list

**Term B**
- CBE 4498  Biochemical Process and Plant Design
- ELI 4110g  Engineering Ethics, Sustainable Development and the Law
  - Two 0.5 Technical elective
  - 0.5 Non-technical elective taken from approved list

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**NOTES:**

**Important:**

Students are responsible for ensuring they have the correct courses required for their degree. If you are unsure which courses you still need or if you see courses listed on the progression sheet that are no longer offered or are not offered in the term you see listed here, please contact your Academic Counsellor.

**Non-technical Electives:**

http://www.eng.uwo.ca/undergraduate/upper_year/electives.html

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Accelerated Masters students can take a graduate course with special permission from the Department Chair.

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The official version of the academic calendar can be found at: www.westerncalendar.uwo.ca