# Chemical: Biochemical and Environmental Engineering (Option B)

**September 2017** (students who entered first year *prior* to September 2016)

### Year 2:

#### Term A
- AM 2270a  Applied Math for Engineering II
- CBE 2206a  Industrial Organic Chemistry I
- CBE 2214a  Engineering Thermodynamics
- CBE 2220a  Chemical Process Calculations
- CBE 2290a  Fundamentals of Biochemical and Environmental Engineering
- ES 2211F  Engineering Communications

#### Term B
- AM 2277b  Applied Math Chemical and Civil Engineering III
- CBE 2207b  Industrial Organic Chemistry II
- 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 3330a  Bioreaction & Bioprocess Engineering
- CBE 3315a  Reaction Engineering
- CBE 3318a  Introduction to Chemical Process Simulation
- CBE 3322a  Heat Transfer Operations
- CBE 3325a  Particulate Operations
- CBE 3395y  Chemical Engineering Lab

#### Term B
- CBE 3310b  Process Dynamics and Control
- CBE 3319b  Introduction to Plant Design and Safety
- CBE 3324b  MassTransfer Operations
- CBE 3323b  Staged Operations
- CBE 3395y  Chemical Engineering Lab
- ECE 2208b  Electrical Measurement and Instrumentation
- One 0.5 technical elective

### Year 4:

#### Term A
- Bus 2299E  Business for Engineers
- CBE 4497  Chemical Process and Plant Design
- CBE 4425*  Biochemical Engineering Project
- One 0.5 technical elective
- 0.5 non-technical elective taken from approved list

#### Term B
- Bus 2299E  Business for Engineers
- CBE 4497  Chemical Process and Plant Design
- CBE 4425*  Biochemical Engineering Project
- CBE 4409b  Wastewater Treatment
- ES 4498G  Engineering Ethics, Sustainable Development and the Law

* A student may substitute two 0.5 technical electives from the list provided for CBE 4425

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

### 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>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>CBE 4403a/b</td>
<td>Biochemical Separation Processes</td>
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<tr>
<td>CBE 4404a/b</td>
<td>Downstream Processing in Pharmaceutical Manufacturing</td>
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<tr>
<td>CBE 4407a/b</td>
<td>Solid Waste Treatment</td>
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<tr>
<td>CBE 4421a/b</td>
<td>Introduction to Biomaterials Engineering</td>
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<tr>
<td>CBE 4422a/b</td>
<td>Nanobiotechnology</td>
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<td>CBE 4423a/b</td>
<td>Tissue Engineering</td>
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<tr>
<td>CBE 4424a/b</td>
<td>Biosensor Principles and Applications</td>
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<td>CBE 4463a/b</td>
<td>Water Pollution Design</td>
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<td>CEE 3362a/b</td>
<td>Drinking Water Quality and Treatment</td>
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<tr>
<td>CEE 4405a/b</td>
<td>Air Pollution</td>
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<tr>
<td>GPE 4484a/b</td>
<td>Green Fuels and Chemicals</td>
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"The official version of the academic calendar can be found at: www.westerncalendar.uwo.ca"