## Electrical Engineering and Biomedical Engineering

For students entering Year 2 in September 2019

### Year 2

#### Term A
- AM 2270A Applied Mathematics for Engineering II
- BME 3201A Fundamentals of Biomedical Engineering Design
- CS 1037A Computer Science Fundamentals II
- ECE 2205A Electric Circuits I
- ECE 2240A Electrical Laboratory
- ECE 2277A Digital Logic Systems

#### Term B
- AM 2276B Applied Mathematics for Electrical & Mechanical Eng. III
- ECE 2231B Introduction to Electronics
- ECE 2235B Circuits and Systems
- ECE 2242B Principles of Design in Electrical Engineering
- Writ 2130G Building Better (Communication) Bridges

#### 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.

### Year 3

#### Term A
- AM 3415A Advanced Applied Mathematics for Electrical Engineering
- Biol 1201A General Biology I
- ECE 3330A Control Systems
- ECE 3332A Electric Machines
- ECE 3337A Electronic Circuits
- SS 2141A Applied Probability and Statistics for Engineers

#### Term B
- Biol 1202B General Biology II
- ECE 3331B Introduction to Signal Processing
- ECE 3336B Electromagnetic Theory
- ECE 3370B Communication Electronics I
- ECE 3375B Microprocessors and Microcomputers
- ECE 3399B Principles and Practices of Design of Electronic Systems

### Year 4

#### Term A
- Biochem 2280A Biochemistry and Molecular Biology
- BME 3301A Neural Systems Engineering
- ECE 4455A Biomedical Systems Analysis
- Physiol 2130 Human Physiology
- 0.5 credit Biomedical Science elective
- 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
- 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)**

### 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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>
<tr>
<td>Biology 2581A/B</td>
<td>Genetics</td>
</tr>
<tr>
<td>Chemistry 2213A/B</td>
<td>Organic Chemistry</td>
</tr>
<tr>
<td>Chemistry 2283F/G</td>
<td>Organic Chemistry II</td>
</tr>
<tr>
<td>Communication Sciences and Disorders 4417A/B</td>
<td>Hearing Science</td>
</tr>
<tr>
<td>Health Science 2300A/B</td>
<td>Systemic Approach to Functional Anatomy</td>
</tr>
<tr>
<td>Health Science 3300A/B</td>
<td>Anatomy of the Human Body</td>
</tr>
<tr>
<td>Medical Science 4931F/G</td>
<td>Selected Topics in Medical Science</td>
</tr>
<tr>
<td>Physiology 3140A/B</td>
<td>Cellular Physiology</td>
</tr>
</tbody>
</table>
## Year 5

### Term A
- **BME 4400** Biomedical Engineering Research Thesis (1.5-credit course)
- **ECE 4416** Electrical/Computer Engineering Project
- **ECE 4429A** Advanced Digital Signal Processing
- **ECE 4437A** Communications Theory
- **ECE 4445A** Introduction to Digital Image Processing
- **ES 3330A** Engineering Innovation I: New Venture Creation

### Term B
- **BME 4400** Biomedical Engineering Research Thesis (1.5-credit course)
- **ECE 4416** Electrical/Computer Engineering Project
- **ES 4498g** Engineering Ethics, Sustainable Development and the Law
- Two 0.5-credit BME technical electives
- One 0.5-credit ECE technical elective

**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; ECE technical electives; Healthcare non-technical electives; or Faculty of Engineering approved non-technical electives.

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<table>
<thead>
<tr>
<th>Psychology 2220A/B</th>
<th>Intro. to Behavioural &amp; Cognitive Neuroscience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomedical Engineering (BME) Electives</td>
<td></td>
</tr>
<tr>
<td>CBE 4421A/B</td>
<td>Intro. to Biomaterials Engineering</td>
</tr>
<tr>
<td>ECE 4438A/B</td>
<td>Advanced Image Processing &amp; Analysis</td>
</tr>
<tr>
<td>Medical Biophysics 3507F/G</td>
<td>Analysis of Oxygen Transport</td>
</tr>
<tr>
<td>Medical Biophysics 3645A/B</td>
<td>Intro. to Biomedical Optics</td>
</tr>
<tr>
<td>Medical Biophysics 4475A/B</td>
<td>Medical Imaging</td>
</tr>
<tr>
<td>Physics 4662A/B</td>
<td>Magnetic Resonance Imaging</td>
</tr>
<tr>
<td>Physics 4672A/B</td>
<td>Radiological Physics</td>
</tr>
</tbody>
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The official version of the academic calendar can be found at: [www.westerncalendar.uwo.ca](http://www.westerncalendar.uwo.ca)