

BSc Honours Biochemistry and Biomedical Sciences (Health Stream)

****ENTERED Program PRIOR TO FALL 2020****

Minimum Requirements for Graduation: GPA Cumulative Average 60% and Major Average 70%

RECOMMENDED COURSE SEQUENCE

Fall Semester:

Winter Semester:

<p>Year 1: Ten Courses Including:</p> <ul style="list-style-type: none"> <input type="checkbox"/> BIOL 1101 – Cell Biology <input type="checkbox"/> CHEM 1100 – General Chemistry I <input type="checkbox"/> MATH 1720 or MATH 1760 – Differential Calculus <input type="checkbox"/> PHYS 1400 – Introductory Physics I <input type="checkbox"/> _____ Any Arts/Social Science Course 	<ul style="list-style-type: none"> <input type="checkbox"/> BIOL 1111 – Biological Diversity <input type="checkbox"/> CHEM 1110 – General Chemistry II <input type="checkbox"/> MATH 1730 – Integral Calculus <input type="checkbox"/> PHYS 1410 – Introductory Physics II <input type="checkbox"/> STAT 2910 – Statistics for the Sciences 						
<p>Year 2: Ten Courses Including:</p> <ul style="list-style-type: none"> <input type="checkbox"/> BIOL 2040 – Human Physiology I <input type="checkbox"/> BIOL 2111 – Genetics <input type="checkbox"/> BIOL 2071 – Intro Microbiology & Techniques <input type="checkbox"/> CHEM 2300 – Intro Organic Chemistry I <input type="checkbox"/> _____ Any Arts/Social Science Course 	<ul style="list-style-type: none"> <input type="checkbox"/> BIOC 2010 – Organic Chem. of Biomolecules <input type="checkbox"/> BIOL 2050 – Human Physiology II <input type="checkbox"/> BIOL 2480 – Principles of Neuroscience <input type="checkbox"/> BIOM 2131 – Introductory Molecular Biology <input type="checkbox"/> _____ Any Arts/Social Science Course 						
<p>Year 3: Ten Courses Including:</p> <ul style="list-style-type: none"> <input type="checkbox"/> BIOC 3100 – Metabolism I <input type="checkbox"/> BIOC or BIOM 3581* – Biotech Lab (A - Semester 1) <input type="checkbox"/> BIOM 2021 – Anatomy (offered in Fall, Winter & Summer) <input type="checkbox"/> CHEM 2200 – Analytical Chemistry <input type="checkbox"/> _____ Any Arts/Social Science Course 	<ul style="list-style-type: none"> <input type="checkbox"/> BIOC 3130 – Protein and Nucleic Acid Chemistry <input type="checkbox"/> BIOC or BIOM 3581* – Biotech Lab (B - Semester 2) <input type="checkbox"/> BIOL 3142 – Evolution <input type="checkbox"/> BIOM 3500 – Molecular Cell Biology OR BIOM 3530 – Advanced Cell Biology (CHOOSE 1) <input type="checkbox"/> _____ Any Area of Study 						
<p>Year 4: Ten Courses Including:</p> <p style="text-align: center;"><u>Chose 2 of the following 4 courses</u></p> <table style="width: 100%; border: none;"> <tbody> <tr> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> <input type="checkbox"/> BIOL 3571 – Animal Cells and Tissues <input type="checkbox"/> CHEM 2400 – Intro Physical Chemistry I </td> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> <input type="checkbox"/> BIOM 3071 – Medical Microbiology and Techniques <input type="checkbox"/> CHEM 3210 – Principles of Instrumental Analysis </td> </tr> </tbody> </table> <p style="text-align: center;"><u>Chose 4 of the following courses</u> (MUST include 2 courses at 4000 level)</p> <table style="width: 100%; border: none;"> <tbody> <tr> <td style="width: 25%; vertical-align: top;"> <ul style="list-style-type: none"> <input type="checkbox"/> BIOC 3310 <input type="checkbox"/> BIOC 4010 <input type="checkbox"/> BIOC 4020 <input type="checkbox"/> BIOC 4050 <input type="checkbox"/> BIOL 3571 <input type="checkbox"/> BIOL 4904* (2 courses) </td> <td style="width: 25%; vertical-align: top;"> <ul style="list-style-type: none"> <input type="checkbox"/> BIOM 3500 (fall or winter) <input type="checkbox"/> BIOM 3550 <input type="checkbox"/> BIOM 4440 <input type="checkbox"/> CHEM 2400 <input type="checkbox"/> CHEM 4900* (2 courses) <input type="checkbox"/> PHYS 3700 </td> <td style="width: 25%; vertical-align: top;"> <ul style="list-style-type: none"> <input type="checkbox"/> BIOC 3110 <input type="checkbox"/> BIOC 4030 <input type="checkbox"/> BIOL 4252 <input type="checkbox"/> BIOL 4481 <input type="checkbox"/> BIOM 3070 <input type="checkbox"/> BIOM 3071 <input type="checkbox"/> BIOM 3530 </td> <td style="width: 25%; vertical-align: top;"> <ul style="list-style-type: none"> <input type="checkbox"/> BIOM 4530 <input type="checkbox"/> BIOM 4540 <input type="checkbox"/> BIOM 4550 <input type="checkbox"/> BIOM 4560 <input type="checkbox"/> BIOM 4590 <input type="checkbox"/> CHEM 3210 </td> </tr> </tbody> </table> <p><input type="checkbox"/> 4 courses from Any Area of study _____</p>		<ul style="list-style-type: none"> <input type="checkbox"/> BIOL 3571 – Animal Cells and Tissues <input type="checkbox"/> CHEM 2400 – Intro Physical Chemistry I 	<ul style="list-style-type: none"> <input type="checkbox"/> BIOM 3071 – Medical Microbiology and Techniques <input type="checkbox"/> CHEM 3210 – Principles of Instrumental Analysis 	<ul style="list-style-type: none"> <input type="checkbox"/> BIOC 3310 <input type="checkbox"/> BIOC 4010 <input type="checkbox"/> BIOC 4020 <input type="checkbox"/> BIOC 4050 <input type="checkbox"/> BIOL 3571 <input type="checkbox"/> BIOL 4904* (2 courses) 	<ul style="list-style-type: none"> <input type="checkbox"/> BIOM 3500 (fall or winter) <input type="checkbox"/> BIOM 3550 <input type="checkbox"/> BIOM 4440 <input type="checkbox"/> CHEM 2400 <input type="checkbox"/> CHEM 4900* (2 courses) <input type="checkbox"/> PHYS 3700 	<ul style="list-style-type: none"> <input type="checkbox"/> BIOC 3110 <input type="checkbox"/> BIOC 4030 <input type="checkbox"/> BIOL 4252 <input type="checkbox"/> BIOL 4481 <input type="checkbox"/> BIOM 3070 <input type="checkbox"/> BIOM 3071 <input type="checkbox"/> BIOM 3530 	<ul style="list-style-type: none"> <input type="checkbox"/> BIOM 4530 <input type="checkbox"/> BIOM 4540 <input type="checkbox"/> BIOM 4550 <input type="checkbox"/> BIOM 4560 <input type="checkbox"/> BIOM 4590 <input type="checkbox"/> CHEM 3210
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* Delivered over two semesters and counts for two courses (6 credits). BIOL 4904 requires a 70% major GPA, and 60% cumulative GPA. CHEM 4900 requires a 70% major GPA, and 70% (for CHEM 4900) cumulative GPA.

CORE COURSES SUMMARY

CORE COURSES (A) – Total 17 Courses

Complete **ALL** of the following:

- BIOC 2010** – Organic Chem. of Biomolecules
- BIOC 3100** – Metabolism I
- BIOC 3130** – Protein and Nucleic Acid Chem.
- BIOL 1101** – Cell Biology
- BIOL 1111** – Biological Diversity
- BIOL 2040** – Human Physiology I
- BIOL 2050** – Human Physiology II
- BIOL 2071** – Intro Microbiology & Techniques
- BIOL 2111** – Genetics
- BIOL 2480** – Principles of Neuroscience
- BIOL 3142** – Evolution
- BIOM 2021** – Anatomy
- BIOM 2131** – Introduction Molecular Biology
- CHEM1100** – General Chemistry I
- CHEM 1110** – General Chemistry II
- CHEM 2200** – Analytical Chemistry
- CHEM 2300** – Intro Organic Chem. I

CORE COURSES (B) – Total 2 Courses

Complete **1** of the following pair:

- BIOC 3581A & 3581B** OR **BIOM 3581A & 3581B** – Biotechnology

CORE COURSES (C) – Total 1 Course

Complete **1** of the following:

- BIOL 3500** – Molecular Cell Biology
- BIOL 3530** – Advanced Cell Biology

CORE COURSES (D) – Total 2 Courses

Complete **2** of the following:

- BIOL 3571** – Animal Cells and Tissues
- BIOM 3071** – Medical Micro. And Techniques
- CHEM 2400** – Intro. Physical Chemistry
- CHEM 3210** – Princ. of Instrumental Analysis

CORE COURSES (E) – Total 4 courses

Complete **4** of the following (at **least 2 courses at 4000 level**):

- BIOC 3110** – Metabolism II
- BIOC 3310** – Pharmacology
- BIOC 4010** – Bioinformatics/Genomics/Proteomics
- BIOC 4020** – Lipids, Lipoproteins Signaling
- BIOC 4030** – Enzymology and Biotechnology
- BIOC 4050** – Drug Design
- BIOL 3571** – Animal Cells and Tissues
- BIOL 4252** – Evolutionary Endocrinology
- BIOL 4481** – Excitable Cells
- BIOL 4904*** – Undergrad Research in Biology (2 courses)
- BIOM 3070** – Medical Microbiology OR **BIOM 3071** – Medical Micro. And Techniques (cannot take both)
- BIOM 3500** – Molecular Cell Biology
- BIOM 3530** – Advanced Cell Biology
- BIOM 3550** – Embryology
- BIOM 4440** – Neurophysiology
- BIOM 4530** – Biology of Cell Transformation
- BIOM 4540** – Regenerative Biology and Disease
- BIOM 4550** – Devel. Signal. & Devel. Genetics
- BIOM 4560** – Molecular Biotechnology
- BIOM 4590** – Epigenetics
- CHEM 2400** – Intro. Physical Chemistry
- CHEM 3210** – Princ. of Instrumental Analysis
- CHEM 4900*** – Research (2 courses)
- PHYS 3700** – Intro to Medical Physics

ADDITIONAL COURSES – Total 14 courses

Complete **ALL** of the following:

- MATH 1720** – Differential Calculus
- MATH 1730** – Integral Calculus
- PHYS 1400** – Intro. Physics I
- PHYS 1410** – Intro. Physics II
- STAT 2910** – Statistics for the Sciences
- Arts/Languages or Social Sciences** – Choose **4** Courses
At least one from Arts and one from Social Science
Note: ECON XXXX can count as a Social Science course

- Any Area of Study** – Choose **5** Courses from any area of study
