Dept. of Biomedical Sciences
University of Windsor

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:
Year 1: Ten Courses Including: ❑ **BIOL 1101** – Cell Biology ❑ **CHEM 1100** – General Chemistry I ❑ **MATH 1720** or **MATH 1760** – Differential Calculus ❑ **PHYS 1400** – Introductory Physics I ❑ _____ Any Arts/Social Science Course	❑ **BIOL 1111** – Biological Diversity ❑ **CHEM 1110** – General Chemistry II ❑ **MATH 1730 –** Integral Calculus ❑ **PHYS 1410** – Introductory Physics II ❑ **STAT 2910 –** Statistics for the Sciences
Year 2: Ten Courses Including: ❑ **BIOL 2040 –** Human Physiology I ❑ **BIOL 2111** – Genetics ❑ **BIOM 2071 –** Intro Microbiology & Techniques ❑ **CHEM 2300 –** Intro Organic Chemistry I ❑ _____ Any Arts/Social Science Course	❑ **BIOC 2010 –** Organic Chem. of Biomolecules ❑ **BIOL 2050 –** Human Physiology II ❑ **BIOL 2480 –** Principles of Neuroscience ❑ **BIOM 2131 –** Introductory Molecular Biology ❑ _____ Any Arts/Social Science Course
Year 3: Ten Courses Including: ❑ **BIOC 3100 –** Metabolism I ❑ **BIOC or BIOM 3581 –** Biotech Lab (Semester 1) ❑ **BIOM 2021 –** Anatomy (offered in Fall, Winter & Summer) ❑ **CHEM 2200 –** Analytical Chemistry ❑ _____ Any Arts/Social Science Course	❑ **BIOC 3130 –** Protein and Nucleic Acid Chemistry ❑ **BIOC or BIOM 3581 –** Biotech Lab (Semester 2) ❑ **BIOL 3142 –** Evolution ❑ **BIOM 3500 –** Molecular Cell Biology OR **BIOM 3530 –** Advanced Cell Biology (CHOOSE 1) ❑ _____ Any Area of Study

Year 4: Ten Courses Including:

Chose 2 of the following 4 courses

❑ **BIOL 3571 –** Animal Cells and Tissues	❑ **BIOM 3071** – Medical Microbiology and Techniques
❑ **CHEM 2400 –** Intro Physical Chemistry I	❑ **CHEM 3210 –** Principles of Instrumental Analysis

Chose 4 of the following courses
(**MUST include 2 courses at 4000 level**)

❑ **BIOC 3310**	❑ **BIOM 3500 (fall or winter)**	❑ **BIOC 3110**	❑ **BIOM 4530**
❑ **BIOC 4010**	❑ **BIOM 3550**	❑ **BIOC 4030**	❑ **BIOM 4540**
❑ **BIOC 4020**	❑ **BIOM 4440**	❑ **BIOL 4252**	❑ **BIOM 4550**
❑ **BIOC 4050**	❑ **CHEM 2400**	❑ **BIOL 4481**	❑ **BIOM 4560**
❑ **BIOL 3571**	❑ **CHEM 4900* (2 courses)**	❑ **BIOM 3070**	❑ **BIOM 4590**
❑ **BIOL 4904* (2 courses)**	❑ **PHYS 3700**	❑ **BIOM 3071**	❑ **CHEM 3210**
		❑ **BIOM 3530**	

❑ 4 courses from Any Area of study _____ _____ _____ _____

*Courses are taken fall and winter and requires a 70% major GPA, and 60% (for BIOL 4904) or 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 (F) – 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

Students considering application to some Pharmacy schools are advised to take CHEM-2400.
Students planning to write the MCAT or DAT may wish to take PSYC-1150 and PSYC-1160 (Social Science) and GART-1500 or ENGL-1001 (Art/Language)