



Generating Solutions

Chemistry is the study of the structure and behaviour of molecules. This includes the construction of molecules with specific properties for use in areas such as pharmaceuticals and agrochemicals. Students also study the necessary theoretical and practical insights to acquire a thorough interdisciplinary understanding of material at the interfaces of chemistry, biology, and pharmacology. Biological & Pharmaceutical Chemistry is a chemistry-based approach to the synthesis, analysis and investigation of biological and pharmaceutical structures in the context of biological function and pharmaceutical applications.

University of Guelph Advantage

- A national and international reputation for excellence in research and teaching in chemistry
- Award winning faculty in chemical education, electro-chemistry, toxicology, biochemistry, and spectroscopy

Our co-op process responds to your needs. Employers can post, interview and hire throughout the semester and our students are available for 4 or 8 month work terms. The **Experience Guelph** hiring tool makes hiring Guelph co-op students easy!

Student Strengths

- A sound knowledge of the theoretical foundations of the chemical sub-disciplines of analytical, inorganic, organic, and physical chemistry
- Practical laboratory skills in wet bench chemistry including inorganic and organic synthesis, quantitative analysis and analytical instrumentation
- Excellent communication and problem-solving experience

Biological & Pharmaceutical Chemistry Course Sequencing

YEAR	FALL (SEPT-DEC)	WINTER (JAN-APRIL)	SUMMER (MAY-AUG)
ONE	<ul style="list-style-type: none"> INTRODUCTION TO MOLECULAR & CELLULAR BIOLOGY GENERAL CHEMISTRY I INTEGRATED MATHEMATICS & PHYSICS I 1 LIBERAL EDUCATION ELECTIVE 	<ul style="list-style-type: none"> GENERAL CHEMISTRY II INTRODUCTION TO CO-OPERATIVE EDUCATION ONE OF: DISCOVERING BIODIVERSITY OR BIOLOGICAL CONCEPTS OF HEALTH INTEGRATED MATHEMATICS AND PHYSICS II 1 LIBERAL EDUCATION ELECTIVE 	OFF
TWO	<ul style="list-style-type: none"> INTRODUCTION TO BIOCHEMISTRY STRUCTURE AND BONDING ANALYTICAL CHEMISTRY I PHYSICAL CHEMISTRY 1 ELECTIVE OR RESTRICTED ELECTIVE 	WORK TERM ONE	<ul style="list-style-type: none"> STRUCTURE AND SPECTROSCOPY ORGANIC CHEMISTRY I ANALYTICAL CHEMISTRY II: INSTRUMENTAL ANALYSIS STATISTICS I 1 ELECTIVE OR RESTRICTED ELECTIVE
THREE	<ul style="list-style-type: none"> ANALYTICAL BIOCHEMISTRY ORGANIC CHEMISTRY II ONE OF: CHEMISTRY OF THE ELEMENTS I OR 0.5 ELECTIVES OR RESTRICTED ELECTIVES 2 ELECTIVES OR RESTRICTED ELECTIVES 	<p>OPTION A:</p> <ul style="list-style-type: none"> STRUCTURE AND FUNCTION IN BIOCHEMISTRY CHEMISTRY OF THE ELEMENTS II ORGANIC CHEMISTRY III 2 ELECTIVES OR RESTRICTED ELECTIVES <p>OPTION B:</p> <ul style="list-style-type: none"> 2.50 CREDITS FROM XSEN* COURSES (SEE LIST BELOW) 	WORK TERM TWO
FOUR	WORK TERM THREE	<ul style="list-style-type: none"> 5 ELECTIVES OR RESTRICTED ELECTIVES 	WORK TERM FOUR
FIVE	<ul style="list-style-type: none"> ONE OF: SYNTHETIC ORGANIC CHEMISTRY OR TOPICS IN BIO-ORGANIC CHEMISTRY 4 ELECTIVES OR RESTRICTED ELECTIVES 		

OPTION B (SEMESTER 6, 3rd YEAR WINTER) COURSE LIST:

- Pharmacology & Applied Toxicology
- Occupational Health & Chemistry
- Pharmaceutical Analysis - Advanced
- Pharmaceutical Product Formulations
- Introduction to Pharmaceutical Manufacturing
- Biopharmaceuticals
- Pharmaceutical Organic Chemistry

***NOTE:** ALL OF THESE COURSES ARE TAUGHT AT THE SENECA@YORK CAMPUS OF SENECA COLLEGE IN TORONTO

BASED ON THE 2022/23 UNDERGRADUATE CALENDAR

PLEASE SEE THE CURRENT UNDERGRADUATE CALENDAR FOR MORE INFORMATION