Chemistry



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 focus on the determination of trace chemicals in the environment using techniques for separation and spectroscopic analysis and the design of new materials for the microelectronics industry.

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 proficiency in wet bench chemistry including inorganic and organic synthesis, quantitative analysis and analytical instrumentation
- Excellent communication and problem-solving skills

recruit@uoguelph.ca
519-824-4120 ext. 52323
uoguelph.ca/coop

Chemistry Course Sequencing

YEAR	FALL (SEPT-DEC)	WINTER (JAN-APRIL)	SUMMER (MAY-AUG)
ONE	• INTRODUCTION TO MOLECULAR AND CELLULAR BIOLOGY • INTEGRATED MATHEMATICS & PHYSICS I • 1 LIBERAL EDUCATION ELECTIVE • GENERAL CHEMISTRY I	• INTEGRATED MATHEMATICS & PHYSICS II • GENERAL CHEMISTRY II • ONE OF: DISCOVERING BIODIVERSITY OR BIOLOGICAL CONCEPTS OF HEALTH • INTRODUCTION TO CO-OPERATIVE EDUCATION • LINEAR ALGEBRA I	**OFF**
TWO	• INTRODUCTION TO BIOCHEMISTRY • STRUCTURE AND BONDING • ANALYTICAL CHEMISTRY I • APPLIED DIFFERENTIAL EQUATIONS • 1 ELECTIVE	**WORK TERM ONE**	• STRUCTURE AND SPECTROSCOPY • ORGANIC CHEMISTRY I • ANALYTICAL CHEMISTRY II: INSTRUMENTAL ANALYSIS • 2 ELECTIVES
THREE	• THERMODYNAMICS AND KINETICS • ORGANIC CHEMISTRY II • CHEMISTRY OF THE ELEMENTS I • QUANTUM CHEMISTRY • 1 ELECTIVE	• ORGANIC CHEMISTRY III • CHEMISTRY OF THE ELEMENTS II • 3 ELECTIVES/RESTRICED ELECTIVES	**WORK TERM TWO**
FOUR	**WORK TERM THREE**	• 5 ELECTIVES/RESTRICTED ELECTIVES	**WORK TERM FOUR**
FIVE	• 4 ELECTIVES/RESTRICTED ELECTIVES • ANALYTICAL CHEMISTRY III: ANALYTICAL INSTRUMENTATION		

AT LEAST 1.00 CREDITS OF LIBERAL EDUCATION ELECTIVES ARE REQUIRED

3.00 CREDITS FROM THE 3000/4000 LEVEL AS FOLLOWS:

1.50 CREDITS FROM:

- MOLECULAR SPECTROSCOPY **OR** TOPICS IN ADVANCED PHYSICAL CHEMISTRY
- ADVANCED TOPICS IN INORGANIC CHEMISTRY **OR** BIOINORGANIC CHEMISTRY
- ORGANIC REACTIVITY **OR** SYNTHETIC ORGANIC CHEMISTRY

1.50 CREDITS FROM:

- MOLECULAR SPECTROSCOPY
- CHEMISTRY AND INDUSTRY
- ADVANCED TOPICS IN ANALYTICAL CHEMISTRY
- METABOLIC PROCESSES
- ENZYMOLOGY
- MEMBRANE BIOCHEMISTRY
- ADVANCED TOPICS IN INORGANIC CHEMISTRY
- BIOINORGANIC CHEMISTRY
- ORGANIC REACTIVITY
- SYNTHETIC ORGANIC CHEMISTRY
- TOPICS IN BIO-ORGANIC CHEMISTRY
- TOPICS IN ADVANCED PHYSICAL CHEMISTRY
- CHEMISTRY RESEARCH PROJECT I
- CHEMISTRY RESEARCH PROJECT II
- BIOCHEMICAL TOXICOLOGY

BASED ON THE 2021/22 UNDERGRADUATE CALENDAR

PLEASE SEE THE CURRENT UNDERGRADUATE CALENDAR FOR MORE INFORMATION