HONOURS BSC CHEMISTRY

Chemistry is a modern, dynamic and diverse field that involves investigating the substances that make up our physical world and how they change. Chemistry touches everything we come into contact with. It is connected to almost all areas of science and engineering. For example, chemists play a vital role in developing new drugs, understanding and modifying biological processes and making materials for advanced electronic devices. Chemists are also important players in such diverse areas as genetic engineering, forensic science and the oil and gas industry. More recently, chemists have been at the forefront of nanotechnology and emerging green technologies, particularly in the development of sustainable energy sources.

The Department of Chemistry and Biomolecular Sciences at the Faculty of Science offers chemistry, biochemistry and biopharmaceutical science programs with unique options in medicinal chemistry, genomics, advanced materials chemistry, ecochemistry and chemical biology. In addition to classroom teaching, programs offer practical laboratory training with a focus on individual instruction.

This program is offered in English and in French.

Program Requirements

Co-operative education is available with this program.

The French immersion stream is available with this program.

Requirements for this program have been modified. Please consult the 2022-2023 calendars (http://www.uottawa.ca/academic/info/regist/1516/calendars/) for the previous requirements.

Compulsory Courses at the 1000 level		
CHM 1311	Principles of Chemistry	3 Units
CHM 1321	Organic Chemistry I	3 Units
MAT 1320	Calculus I	3 Units
MAT 1322	Calculus II	3 Units
MAT 1341	Introduction to Linear Algebra	3 Units
PHY 1121	Fundamentals of Physics I	3 Units
PHY 1122	Fundamentals of Physics II	3 Units
Compulsory Courses at the 2000 level		
BCH 2333	Introduction to Biochemistry	3 Units
CHM 2120	Organic Chemistry II	3 Units
CHM 2123	Laboratory of Organic Chemistry II	3 Units
CHM 2131	Chemical Thermodynamics of Gases and Solutions	3 Units
CHM 2330	Physical Chemistry: Introduction to the Molecular Properties of Matter	3 Units
CHM 2353	Descriptive Inorganic Chemistry	3 Units
CHM 2354	Analytical Chemistry	3 Units
PHY 2100	Fundamentals of Applied Physics III	3 Units
Compulsory Courses at the 3000 level		
CHM 3120	Intermediate Organic Chemistry	3 Units
CHM 3122	Applications of Spectroscopy in Chemistry	3 Units
CHM 3140	Quantum Chemistry and Molecular Modelling	3 Units
CHM 3350	Transition Metal Chemistry	3 Units
CHM 3373	Molecular Spectroscopy and Statistical Mechanics	3 Units
Compulsory Courses at the 4000 level		
CHM 4354	Principles of Instrumental Analysis	3 Units
One option from the following:		9 Units
Option 1: Honours Project		
CHM 4010	Research Project	
Option 2: Honours Project Co-op Option		
CHM 4016	Research Project	
and 3 optional course units in chemistry (CHM) at the 3000 or 4000 level		
Optional Courses		
3 course units from:		3 Units
CHM 3126	Laboratory of Organic Chemistry	
CHM 3127	Laboratory of Organic Chemistry – Research Option	
3 course units from Physical-Theoretical:		3 Units
CHM 4141	Computational Chemistry I	
CHM 4143	Computational Chemistry II	
CHM 4182	Molecular Dynamics in Chemistry	
CHM 4340	Application of Theoretical Chemistry	
CHM 4380	Advanced Characterization Methods in Material Science and Catalysis	
CHM 4381	Photochemistry and Photobiology	
CHM 4390	Special Topics in Physical Chemistry	
CHM 4391	Selected Topics in Physical Chemistry	
3 course units from Organic - Bio-organic:		3 Units
BIM 4316	Modern Bioanalytical Chemistry	
CHM 4120	Advanced Organic Chemistry	
CHM 4123	Medicinal Chemistry	
CHM 4139	Enzyme Chemistry and Biocatalysis	
CHM 4155	Polymer and Applied Chemistry	
CHM 4325	Advanced Organic Synthesis and Reaction Mechanisms	
CHM 4328	Special Topics in Organic Chemistry	
BPS 4129	Advanced Chemical Biology	
3 course units from Inorganic - Materials:		3 Units
CHM 4129	Chemistry of Sustainable Energy	
CHM 4311	Selected Topics in Inorganic Chemistry	
CHM 4313	Solid State Chemistry	
CHM 4317	Organometallic Chemistry	
CHM 4318	Nanostructured Materials	
CHM 4319	Bio-Inorganic Chemistry	
3 optional course units in chemistry (CHM) at the 2000, 3000 or 4000 level		3 Units
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Elective Courses		
12 elective course units offered by the Faculty of Arts, the Faculty of Education, the Faculty of Law, the Faculty of Social Sciences or the Telfer School of Management		12 Units
18 elective course units		18 Units
Total:		**120 Units**