HONOURS BSC IN 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 2020-2021 calendars (http://www.uottawa.ca/academic/info/regist/1516/calendars/) for the previous requirements.

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
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
CHM 3120 Intermediate Organic Chemistry 3 Units
CHM 3122 Applications of Spectroscopy in Chemistry 3 Units
CHM 3126 Laboratory of Organic 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
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
3 optional course units in chemistry (CHM) at the 2000, 3000 or 4000 level 3 Units
3 optional course units in chemistry (CHM) at the 3000 or 4000 level 3 Units
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
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