

Archived: September 6, 2016

Science and Technology Programs

Chemistry

Credential:

Bachelor Degree

Options:

Minor

Program Length:

4 Years

The Program

The Bachelor of Science, Minor in Chemistry is designed to be taken as part of a Double Minor or as a Major and Minor combination for a Bachelor of Science. The program introduces students to the traditional sub-disciplines of chemistry, with a particular emphasis on analytical and environmental chemistry. The course selection is designed to maintain broad appeal and relevance to a variety of career objectives including teaching, environmental consulting, and academic research. Students will gain an appreciation for the role of chemistry in many aspects of modern scientific enquiry, including hands-on experience with modern chemical instrumentation and techniques.

The curriculum has been designed to focus on the underlying principles to provide an understanding of physical, chemical and biological processes. Courses develop critical thinking, problem solving and communication skills which are encouraged by close student-instructor interactions and student-student mentorship.

Research

The Applied Environmental Research Laboratory (AERL) is a state-of-the-art lab where pure and applied research in the environmental sciences is conducted in collaboration with public and private partners. The lab is fully equipped for foliar, soil and water analysis by both traditional and emerging methods. Some of the instrumentation is incorporated into upper-level chemistry lab courses. In the final year, students have an option to complete a one-semester directed research project, under the supervision of a faculty member. The AERL also provides year round employment opportunities for senior students to assist faculty with environmental sampling, chemical analysis, method development and data interpretation. Some research projects that have recently been conducted at the AERL include: the development of a novel technique for the rapid detection of volatile contaminants in air and drinking water; an investigation of the effects of variable retention logging practices on the water chemistry of small coastal streams; geochemical analysis of Gulf Island groundwater samples; bioaccumulation of heavy metals in marine mammal parasites; the role of photochemical and microbial processes in the biodegradation of woodwaste leachates; and an assessment of land use impacts on water quality in the Englishman River watershed.

Program Outline

Requirements for a Minor

Students must fulfill all Institutional B.Sc. Degree Requirements, including Degree English Requirements and courses listed below:

Years 1 and 2	Credits
Select <i>one</i> of the following pairs: CHEM 140* - (Chemistry Fundamentals I) <i>and</i> , CHEM 141* - (Chemistry Fundamentals II) <i>or</i> CHEM 142* - (Chemistry Fundamentals II)	8
Select <i>four</i> ** courses from the following: BIOL 201 - (Principles of Biochemistry), CHEM 213 - (Practical Spectroscopy), CHEM 221 - (Physical Chemistry), CHEM 222 - (Inorganic Chemistry), CHEM 231 - (Organic Chemistry I), CHEM 232 - (Organic Chemistry II), PHYS 215 - (Introductory Quantum Physics)	12

* Effective September 2011: **CHEM 140 will replace CHEM 122, CHEM 141 will replace CHEM 111, and CHEM 142 will replace CHEM 121.** Students who have already completed the old Chemistry courses can still use those courses to meet the first year chemistry requirements.

** Students should check upper-level course prerequisites to guide second year course choices.

Years 3 and 4	Credits
Minimum of 18 credits of Chemistry courses numbered 300 or above.*	18

* Check individual course prerequisites.

Notes:

- CHEM 490 requires 9 upper-level CHEM credits and permission of a faculty supervisor; recommended in the fourth year.
- Not all courses are offered every year; please check the website (viu.ca/chemistry) to find out which courses are offered each year.

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