

CHEMISTRY

Departmental Notes

Subject Code: **CHEM**

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Overview

As one of the top chemistry teaching and research departments in Canada, we offer a stimulating learning environment for undergraduate and graduate students. Queen's Chemistry programs have rich practical laboratory components, where you will put into practice key concepts learned from your lectures. In upper years, you can specialize in one or more of the fundamental branches of chemistry – analytical, inorganic, organic, physical, and theoretical – or explore new applications such as environmental, materials, biological, computational, or polymer chemistry.

Departmental Policies

Safety in the Laboratories

The Departmental Safety Rules are strictly enforced. Everyone is required to wear protective goggles of an approved type at all times in the laboratories. If contact lenses are used, they must be worn underneath protective goggles. Arms, legs, and feet must be covered while working in laboratories. Open-toed shoes (sandals) are not permitted. The use of a laboratory coat is required. Protective gloves may be required.

Students must complete Queen's WHMIS and Safety Awareness training in order to take a laboratory course in Chemistry. WHMIS and Safety Awareness training will

normally be offered during the first two weeks of the Fall Term by the Department of Environmental Health and Safety.

Laboratory Costs

Some chemistry courses require students to purchase a laboratory manual produced in the Department for that particular course. The cost of these manuals will be approximately equal to their cost of production.

A standard scientific calculator (cost of about \$25) is required for use in tests and examinations in many chemistry courses.

Advice to Students

Programs in Chemistry (Overview)

The Department of Chemistry offers a number of Plans, from the Minor (<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments-programs/chemistry/chemistry-minor-arts/>) (30.0 units plus 6.0 supporting units) to the Specialization (<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments-programs/chemistry/chemistry-specialization-science-bs-honours/>) (90.0 units). Students wishing to specialize in chemistry should follow the Major (<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments-programs/chemistry/chemistry-major-science-bs-honours/>) or Specialization Plans (<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments-programs/chemistry/chemistry-specialization-science-bs-honours/>). Students wishing to study chemistry and another subject should consider chemistry as one component of a Major-Minor degree combination, or the Specialization Plan in Environmental Chemistry (<https://queensu-ca-public.courseleaf.com/arts-science/schools-departments-programs/chemistry/environmental-chemistry-specialization-science-bs-honours/>) found in the Environmental Studies section of this Calendar.

Second-Year Courses in Organic Chemistry

CHEM 281 General Organic Chemistry I (with Virtual Laboratory) and CHEM 282 General Organic Chemistry II are intended primarily for students in Life Sciences or Biology Plans who are interested in organic chemistry. Students registered in or considering registering in any Plan in Chemistry or Biochemistry should not enrol in these courses. Organic chemistry is covered in a more integrated fashion in the courses CHEM 211 Main Group Chemistry, CHEM 212 Principles of Chemical Reactivity, CHEM 222 Methods of Structure Determination and CHEM 223 Organic Reactions; approximately 60% of the unit weighting in these courses involves instruction in organic chemistry, as determined by external accreditation. Students who are undecided about



their choice of Plan before entering second year are strongly recommended to consult the Chair of Undergraduate Studies in Chemistry. Priority will be given to students in Chemistry and Biochemistry Plans for enrolment in CHEM 211 Main Group Chemistry, CHEM 212 Principles of Chemical Reactivity, CHEM 213 Introduction to Chemical Analysis, CHEM 221 Material, Solutions, Interfaces, CHEM 222 Methods of Structure Determination and CHEM 223 Organic Reactions.

Accreditation by the Canadian Society of Chemistry (CSC)

The Chemistry Major and Chemistry Specialization Plans are fully accredited by the Canadian Society of Chemistry. Students completing these plans will be eligible for membership in the Chemical Institute of Canada and for membership in the various provincial professional chemical associations.

Special Study Opportunities Seminars in Chemistry

The seminar program is an important aspect of departmental offerings although seminars do not carry course credit. They may occur at various times during the week, but Friday (11:30 a.m. - 12:30 p.m.) is the regularly scheduled seminar time. All third- and fourth-year students in chemistry programs are encouraged to attend.