CHEMISTRY (CHEM)

About Chemistry

Chemistry is both a pure science, offering a challenging intellectual pursuit, and an applied science whose technology is of fundamental importance to the economy and society. Modern chemists seek an understanding of the structure and properties of atoms and molecules to predict and interpret the properties and transformations of matter and the energy changes that accompany those transformations. Many of the concepts of physics and mathematics are basic to chemistry, while chemistry is of fundamental importance to many other disciplines, such as the biological and medical sciences, geology, metallurgy, etc.

A degree in chemistry leads to a wide variety of professional vocations. The large science-based industries (petroleum refining, plastics, pharmaceuticals, etc.) all employ chemists in research, development, and quality control. Many federal and provincial departments and agencies employ chemists in research and testing laboratories. Such positions are expected to increase with the currently growing concern for the environment and for consumer protection. A background in chemistry is also useful as a basis for advanced study in other related fields, such as medicine and the biological sciences. For a business career, a B.Sc. in Chemistry can profitably be combined with a master's degree in Business Administration, or a study of law for work as a patent lawyer or forensic scientist.

Chemistry courses at the university level are traditionally divided into four areas of specialization:

1. organic chemistry, dealing with the compounds of carbon;
2. inorganic chemistry, concerned with the chemistry and compounds of elements other than carbon;
3. analytical chemistry, which deals with the identification of substances and the quantitative measurement of their compositions; and
4. physical chemistry, which treats the physical laws, kinetics, and energetics governing chemical reactions, behaviour of materials, and molecular structure.

Naturally, there is a great deal of overlap between these different areas, and the boundaries are becoming increasingly blurred. After a general course at the introductory level, courses in organic, inorganic, analytical, and physical chemistry are offered throughout the university years. Since chemistry is an experimental science, laboratory classes accompany most undergraduate courses. In addition, courses are offered in polymer, theoretical, green, nano, and biological chemistry to upper-year undergraduates.

There are two main programs in the Department of Chemistry: Honours and Major. There are also a number of B.Sc. Liberal and other programs available. Interested students may inquire about these at the Student Advisory Office.

Office for Science and Society

The office for Science and Society is dedicated to the promotion of critical thinking and the presentation of practical scientific information to the public, educators, and students in an accurate and responsible fashion. The office answers queries from the public as well as from the media, with a view toward establishing scientific accuracy. The office also offers a variety of educational and interesting presentations on scientific topics and its members contribute to a number of courses under the umbrella of “The World of Chemistry”.

Available Programs

- Chemical Engineering Minor (B.Sc.) (24 credits)
- Chemistry - Bio-organic Honours (B.Sc.) (75 credits)
- Chemistry - Bio-organic Major (B.Sc.) (63 credits)
- Chemistry - General Liberal Program - Core Science Component (B.Sc.) (49 credits)
- Chemistry Honours (B.Sc.) (71 credits)
- Chemistry Major (B.Sc.) (59 credits)
- Chemistry Minor (B.Sc.) (20 credits)
- Chemistry: Biophysical Chemistry Honours (B.Sc.) (75 credits)
- Chemistry: Biophysical Chemistry Major (B.Sc.) (66 credits)

Chemistry (CHEM) Related Programs

Joint Honours in Physics and Chemistry

For more information, see Physics (PHYS).

Location

Faculty of Science
Department of Chemistry
Otto Maass Chemistry Building
801 Sherbrooke Street West
Montreal QC H3A 0B8
Departmental Office: Room 322
Telephone: 514-398-6999
Website: mcgill.ca/chemistry

Undergraduate advisor:
Student Advisory Office
Room 116 Otto Maass
Website: mcgill.ca/chemistry/current-undergraduate-students/advising