CHEMISTRY MAJOR (B.SC.) (59 CREDITS)

Offered by: Chemistry (Faculty of Science)
Degree: Bachelor of Science; Bachelor of Arts and Science
Program credit weight: 59

Degree Requirements — B.Sc.

This program is offered as part of a Bachelor of Science (B.Sc.) degree.

To graduate, students must satisfy both their program requirements and their degree requirements.

- The program requirements (i.e., the specific courses that make up this program) are listed under the Course Tab (above).
- The degree requirements—including the mandatory Foundation program, appropriate degree structure, and any additional components—are outlined on the Degree Requirements page.

Students are responsible for ensuring that this program fits within the overall structure of their degree and that all degree requirements are met. Consult the Degree Planning Guide on the SOUSA website for additional guidance.

Note: For information about Fall 2025 and Winter 2026 course offerings, please check back on May 8, 2025. Until then, the "Terms offered" field will appear blank for most courses while the class schedule is being finalized.

Program Prerequisites

Pre-Program Prerequisites

Students entering from the Freshman program must have included CHEM 110 General Chemistry 1. and CHEM 120 General Chemistry 2., BIOL 112 Cell and Molecular Biology., MATH 133 Linear Algebra and Geometry., MATH 140 Calculus 1./MATH 141 Calculus 2. or MATH 150 Calculus A./MATH 151 Calculus B., PHYS 101 Introductory Physics - Mechanics./PHYS 102 Introductory Physics - Electromagnetism. or PHYS 131 Mechanics and Waves./PHYS 142 Electromagnetism and Optics., or their equivalents in their Freshman year. Quebec students must have completed the DEC with appropriate science and mathematics courses. Note that students who have successfully completed MATH 150 Calculus A. and MATH 151 Calculus B. do not have to take MATH 222 Calculus 3..

Required Courses (53 credits)

A computer science course, either COMP 202 Foundations of Programming. or COMP 208 Computer Programming for Physical Sciences and Engineering ., is strongly recommended during U1 for students who have no previous introduction to computer programming. Students should contact their adviser on this matter. Completion of Mathematics MATH 222 Calculus 3. during U1 is also strongly recommended.

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Course	Title	Credits
CHEM 213	Introductory Physical Chemistry 1: Thermodynamics.	3
CHEM 242	Organic Chemistry 1 for Chemistry and Biochemistry.[1]	4
CHEM 252	Organic Chemistry 2 for Chemistry and Biochemistry.	4
CHEM 267	Introductory Chemical Analysis.	3
CHEM 273	Introductory Physical Chemistry 2: Kinetics and Methods.	3
CHEM 281	Inorganic Chemistry 1.	3
CHEM 302	Introductory Organic Chemistry 3.	3
CHEM 332	Biological Chemistry.	3
CHEM 345	Introduction to Quantum Chemistry.	3
CHEM 355	Applications of Quantum Chemistry.	3
CHEM 365	Statistical Thermodynamics.	2
CHEM 367	Instrumental Analysis 1.	3
CHEM 377	Instrumental Analysis 2.	3
CHEM 381	Inorganic Chemistry 2.	3
CHEM 392	Experimental Chemistry 1.	3
CHEM 493	Advanced Physical Chemistry Laboratory.	2
MATH 222	Calculus 3.[2]	3
PHYS 242	Electricity and Magnetism.	2

[1] Denotes courses with CEGEP equivalents.
The courses are omitted from the program of students who have successfully completed them at the CEGEP level but the Chemistry courses must be replaced by courses in that discipline if students wish to be eligible for admission to the Ordre des chimistes du Québec. Students from outside Quebec or transfer students should consult the Academic Adviser.
See http://www.mcgill.ca/chemistry/current-undergraduate-students/advising/.

[2] Students who have successfully completed MATH 150 Calculus A.MATH 150 Calculus A. and MATH 151 Calculus B. are not required to take MATH 222 Calculus 3..

Complementary Courses (6 credits)

6 credits of Chemistry (CHEM) courses at the 400 level or higher, or MATH 315 Ordinary Differential Equations. plus 3 credits of Chemistry courses at the 400 level or higher.