

Bachelor of Science – Chemistry 2026-27

IMPORTANT NOTE:

The Chemistry program planning guide is heavily designed with prerequisites already in mind. Due to the program being a smaller intake at this time, each 'core' course has limited offerings per academic year.

To ensure your program progression path is as smooth as possible, it is highly recommended that students follow this guide when it comes to planning their CHEM, PHYS, MATH, and BCEM courses. Taking these courses out of sequence (early or late) will result in progression issues and effect the degree completion timeline.

✓	YEAR ONE - Fall	✓	YEAR ONE - Winter
	CHEM 1201 - General Chemistry - Structure & Bonding		CHEM 1202 - General Chemistry – Introduction to Quantitative Chemistry
	PHYS 1201 - Classical Physics I		PHYS 1202 - Classical Physics II
	MATH 1200 - Calculus for Scientists I		MATH 2200 - Calculus for Scientists II
	GNEED Foundation Cluster 1: one of GNEED 1101 or 1103		COMP 2001 - Computer-Based Problem Solving
	GNEED Foundation Cluster 4: one of GNEED 1401, 1403 or 1404		GNEED Foundation Cluster 3: one of GNEED 1301, 1302, or 1303

✓	YEAR TWO - Fall	✓	YEAR TWO - Winter
	CHEM 2101 - Organic Chemistry I		CHEM 2102 - Organic Chemistry II
	CHEM 2301 - Analytical Chemistry I		PHYS 2201- Acoustics, Optics, & Radiation
	CHEM 2601 - Physical Chemistry		CHEM 3200 – Research Methods
	MATH 1203 – Linear Algebra for Scientists		BCEM 2201- General Biochemistry
	GNEED Foundation Cluster 2: one of GNEED 1201, 1202, or 1203		GNEED Tier 2 Cluster 2:

✓	YEAR THREE - Fall	✓	YEAR THREE - Winter
	CHEM 2401 – Inorganic Chemistry		CHEM 3301 - Analytical Chemistry II
	CHEM 3202 – Spectroscopic Methods		CHEM 3602 – Elementary Quantum Mechanics
	CHEM 3601 – Thermodynamics		MATH 3200 - Mathematical Methods
	GNEED Tier 2 Cluster 3:		GNEED Tier 2 Cluster 4:
	Elective:		Elective:

✓	YEAR FOUR - Fall	✓	YEAR FOUR - Winter
	Senior Chemistry Option:		Senior Chemistry Option:
	Choose One of: CHEM 4103- Adv. Organic Synthesis CHEM 4301- Adv. Analytical Chemistry CHEM 4411- Organometallic Chemistry*		CHEM 5200- Community Service-Learning Projects
	CHEM 4701 – Molecular Modelling		GNEED Tier 3:
	GNEED Tier 3:		GNEED Tier 3:
	Elective:		Elective:

Senior General Chemistry Options

Choose two from the following:

BCEM 4212 - Biochemical Pharmacology
CHEM 4103 - Advanced Organic Synthesis
CHEM 4213 - Drug Discovery
CHEM 4301 - Advanced Analytical Chemistry
CHEM 4411 - Organometallic Chemistry
CHEM 4602 - Advanced Quantum Mechanics
CHEM 4603 - Symmetry and Spectroscopy
CHEM 4801 - Nuclear Chemistry

PLEASE READ:

Prerequisites and course descriptions can be found in the Academic Calendar under the 'courses' link by visiting: <https://catalog.mtroyal.ca/>

General Education: General Education approved courses, otherwise known as "GNED requirements" are designed to give you a well-rounded knowledge base and are organized into 4 thematic clusters. Each Cluster has 3 levels; tier 1 (foundation), tier 2 and tier 3.

Cluster 1: Numeracy & Scientific Literacy

Cluster 2: Values, beliefs & Identity

Cluster 3: Community & Society

Cluster 4: Communication

Students must take a foundation level from each of the four clusters, three tier 2 GNEDs (one from each of cluster 2, 3, and 4), and a total of three tier 3 GNEDs from at least two clusters, for a total of 10 GNED courses. For more information and a list of GNED courses, visit mru.ca/gned and click 'courses' on the left-hand navigation

Junior courses are courses at the 1000 level. Students are allowed a maximum of 16 junior courses.

Electives: an elective is any three-credit course. It is advised that students select senior level electives wherever possible to avoid exceeding the sixteen junior course limits.

Advising Plan: Students are strongly advised to follow the progression of classes and course load as indicated. Deviation from the recommended course pattern may result in scheduling conflicts or a delay in graduation.

*CHEM 4411 is only offered in the Winter semesters. Consult your Academic Advisor to make the proper adjustments to your final year planning.