

Bachelor of Science – Chemistry 2024-25

✓	YEAR ONE - Fall	✓	YEAR ONE - Winter
	CHEM 1201 - General Chemistry - Structure & Bonding		CHEM 1202 - General Chemistry – Introduction to Quantitative Chemistry
	MATH 1200 - Calculus for Scientists I		PHYS 1202- Classical Physics II
	PHYS 1201- Classical Physics I		COMP 2001- Computer-Based Problem Solving
	GNEC Foundation Cluster 1: one of GNEC 1101 or 1103		MATH 2200- Calculus for Scientists II
	GNEC Foundation Cluster 4: one of GNEC 1401, 1403 or 1404		GNEC Foundation Cluster 2: one of GNEC 1201, 1202, or 1203

Many courses are prerequisites for upper year courses. Check prerequisites at <http://catalog.mtroyal.ca/>

✓	YEAR TWO - Fall	✓	YEAR TWO - Winter
	CHEM 2101- Organic Chemistry I**		CHEM 2102- Organic Chemistry II**
	CHEM 2301- Analytical Chemistry I**		MATH 1203 – Linear Algebra for Scientists**
	CHEM 2601- Physical Chemistry**		CHEM 3200- Research Methods (CSL course)**
	PHYS 2201- Acoustics, Optics, & Radiation**		BCEM 2201- General Biochemistry**
	Foundation Cluster 3: one of GNEC 1301, 1303, or 1304		GNEC Tier 2 Cluster 2: GNEC

**All courses with notation are strongly recommended to be taken in the semester they are placed in order to support a 4 year completion of the degree. It is your responsibility to plan your schedule and make sure that you are meeting the necessary prerequisites. Consider consulting your advisor if you are planning on reducing your course load.

YEAR THREE – Complete the following courses			
✓	CORE Requirements:	✓	General Education and Electives:
	CHEM 2302- Analytical Chemistry II** (CSL course)		GNEC Tier 2 Cluster 3:
	MATH 3200- Mathematical Methods**		GNEC Tier 2 Cluster 4:
	CHEM 3601- Thermodynamics		Elective:
	CHEM 3202- Spectroscopic Methods		Elective
	CHEM 3602- Elementary Quantum Mechanics		
	CHEM 2401- Inorganic Chemistry		

YEAR FOUR – Complete the following courses			
✓	CORE Requirements:	✓	General Education and Electives:
	CHEM 4701- Molecular Modelling		GNEC Tier 3:
	CHEM 5200- Community Service Learning Projects (CSL course)		GNEC Tier 3:
	One of: CHEM 4103- Adv. Organic Synthesis OR CHEM 4301- Adv. Analytical Chemistry		GNEC Tier 3:
	Senior General Chemistry Option		Elective:
	Senior General Chemistry Option		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 "GNEC 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 GNECs (one from each of cluster 2, 3, and 4), and a total of three tier 3 GNECs from at least two clusters, for a total of 10 GNEC courses. For more information and a list of GNEC 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.

CSL - Community Service Learning: three CSL courses are needed to receive this citation on your transcript, learn more here: mru.ca/csl