

Bachelor of Science - General Science 2026/27

✓	YEAR ONE - Fall	✓	YEAR ONE - Winter
	Concentration A (1XXX)		Concentration A (1XXX)
	Concentration B (1XXX)		Concentration B (1XXX)
	MATH 1200 - Calculus for Scientists I		MATH 2234 – Concepts of Mathematical Statistics
	GNEED Foundation Cluster 1: One of GNEED 1101 or 1103		GNEED Foundation Cluster 2: One of GNEED 1201, 1202, or 1203
	GNEED Foundation Cluster 4: One of GNEED 1401, 1403 or 1404		GNEED Foundation Cluster 3: One of GNEED 1301, 1303, or 1304

Concentration courses are listed on page 2. Many 1XXX courses are prerequisites for future courses. Check prerequisites and course descriptions at <http://catalog.mtroyal.ca/>

✓	YEAR TWO - complete the following courses*
	Concentration A (2XXX)
	Concentration A (2XXX)
	Concentration B (2XXX)
	Concentration B (2XXX)
	COMP 2001 - Computer-Based Problem Solving for the Sciences
	COMP 3110 - Data-Driven Thinking: Foundations of Data and Machine Learning
	One of: MATH 1203, MATH 2200 (prereq: MATH 1200), or MATH 2444 (prereq: MATH 2234)
	GNEED Tier 2 Cluster 2
	GNEED Tier 2 Cluster 3
	GNEED Tier 2 Cluster 4

* Certain core courses may have prerequisites that need to be completed in a particular sequence to avoid delays in graduation. In addition, some courses are only offered once per year. **It is your responsibility to plan your schedule, ensure you meet prerequisites and graduation requirements. If you require a reduced course load, please consult your advisor for guidance when planning.**

YEAR THREE - complete the following courses			
✓	CORE requirements:	✓	General Education and Electives:
	SCIE 3010 – Understanding & Translating Scientific Research		GNEED Tier 3 (Cluster___)
	Concentration A (3XXX)		Elective course
	Concentration A (3XXX)		Elective course
	Concentration B (3XXX)		
	Concentration B (3XXX)		
	General Science Option		
	General Science Option		

Take two Tier 3 courses from a minimum of two different clusters, take the third Tier 3 course from any cluster.

YEAR FOUR - complete the following courses			
✓	CORE requirements:	✓	General Education and Electives:
	General Science Option		GNEED Tier 3 (Cluster___)
	General Science Option		GNEED Tier 3 (Cluster___)
	General Science Option		Elective course
	General Science Option		Elective course
	SCIE 5010 - Senior Student Seminar (Fall; prereq: SCIE 3010)		
	One of: SCIE 5020 (Interdisciplinary Project), SCIE 5030 (Work Integrated Learning), or an Independent Projects course →		BIOL 5201 - Independent Projects I CHEM 5201 - Independent Projects I GEOL 5201 - Independent Research Project PHYS 5201 - Independent Projects I

PLEASE READ:

Choose two concentrations from Biology, Chemistry, Geography, Geology, Mathematics or Physics.

Students are encouraged to declare their concentrations by email to studentrecords@mtroyal.ca as soon as possible.

Selecting General Science Options:

information related to General Science Options (GSOs) is on page 2 of this document. Please see your Academic Advisor for more information on this requirement.

General Education: General Education courses, otherwise known as “GNEED requirements”, are designed to give you a well-rounded knowledge base and are organized into four thematic clusters.

- Cluster 1: Numeracy & Scientific Literacy
- Cluster 2: Values, Beliefs & Identity
- Cluster 3: Community & Society
- Cluster 4: Communication

Each Cluster has 3 levels: Foundation, Tier 2 and Tier 3. Students must take a Foundation level from each of the four clusters, three Tier 2 GNEEDs (one from each of cluster 2, 3, and 4), and a total of three Tier 3 GNEEDs from at least two clusters, for a total of 10 GNEED courses. For more information and a list of GNEED courses, visit mru.ca/GNEED 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 for graduation purposes.

Electives: are any three-credit course. It is advised that students select senior-level electives wherever possible to avoid exceeding the limit of sixteen junior courses.

More information about General Science Options and Concentrations are listed on page 2.

This document is only intended as a guide for students and should be cross-referenced with the most recent Mount Royal University Academic Calendar which states updated academic policies and degree requirements. This can change yearly and improve to allow for more options and new courses. Be sure to consult with your Academic Advisor to confirm these changes, graduation requirements, or if you have any questions at scitechadvising@mtroyal.ca

Some senior courses (esp. Biology and Chemistry) are restricted to these majors at the beginning of registration and are not available for General Science students.

Restrictions are usually removed by June 1 for Fall and by Nov 1 for Winter. Sometimes restrictions alternate semesters, so be sure to check Fall, Winter, and Spring for sections without restrictions.

Biology Concentration

BIOL 1202 – Introduction to Cell Biology

BIOL 1204 – Evolution of Eukaryotes

Two of:

BIOL 2101 – Genetics

BIOL 2202 – Cellular and Molecular Biology

BIOL 2203 – Human Anatomy

BIOL 2213 – Principles of Ecology & Evolution

BIOL 2303 – Fundamentals of Human Physiology

Two of:

BIOL 3103 – Introduction to Biophysics*

BIOL 3107 – Evolution in Health & Disease

BIOL 3108 – Conservation Biology

BIOL 3208 – Molecular & Genomic Revolutions in Biology

BIOL 3216 – Human Physiology & Environmental Stress

*Requires PHYS 1202 as prerequisite, can count as GSO

Chemistry Concentration

CHEM 1201 – General Chemistry I

CHEM 1202 – General Chemistry II

CHEM 2101 – Organic Chemistry I

CHEM 2102 – Organic Chemistry II

CHEM 3201 – Structure Determination FALL OR WINTER

One of:

**BCEM 3201 – Protein Biochemistry FALL

**BCEM 3202 – Enzymes & Metabolic Systems WINTER

**BCEM 4212 – Biochemical Pharmacology FALL OR WINTER

CHEM 4103 – Advanced Organic Chemistry: Synthesis WINTER

**Requires BCEM 2201 prerequisite, can count as a GSO

Geography Concentration

GEOG 1101 – The Physical Environment

One of:

GEOG 1103 – The Human Environment

GEOG 1105 – Intro to Mapping, GIS & Remote Sensing

One of:

GEOG 2107 – Weather and Climate

GEOG 2111 – Earth's Changing Surface

One of:

GEOG 2445 – Environmental Problems & Resource Mgmt.

GEOG 2553 – Geographic Information Systems

One of:

GEOG 3107 - Conservation Biogeography

GEOG 4440 - Sustainable Development Geography

One of:

GEOG 3445 – Global Environmental Issues

GEOG 4553 – Advanced Spatial Analysis and GIS

Geology Concentration

GEOL 1201 – The Dynamic Earth FALL OR WINTER

GEOL 1202 – Earth Through Time WINTER

GEOL 2109 – Stratigraphy & Sedimentation FALL

GEOL 2107 – Paleontology WINTER

GEOL 3107 – Geomorphology FALL

GEOL 4105 – Hydrogeology (See an Advisor)

Mathematics Concentration*

MATH 1200 – Calculus for Scientists I

MATH 1203 – Linear Algebra for Scientists & Engineers

MATH 2200 – Calculus for Scientists II

MATH 2234 – Concepts of Mathematical Statistics

MATH 3101 – Numerical Analysis

MATH 3200 – Mathematical Methods

**If selecting Mathematics as a concentration, replace the MATH courses in the above table with three courses from another discipline listed on this page. Please consult with your Academic Advisor.*

Physics Concentration

PHYS 1201 – Classical Physics I

PHYS 1202 – Classical Physics II

*PHYS 2201 – Acoustics, Optics & Radiation WINTER

*PHYS 2203 – Electromagnetism (course is offered every other year and will next run in 2027)

**PHYS 3601 – Thermodynamics FALL

*PHYS 3602 – Elementary Quantum Mechanics WINTER

*requires MATH 2200 prerequisite

**requires MATH 2200, CHEM 1201, CHEM 1202 prerequisites

General Science Options (GSOs) are any GSO attributed science, COMP, or MATH course you are not already planning to take. General Science Option attributes can be found using the search function at mymru.ca > Register & Pay > Look Up Courses or Add/Drop/Withdraw, Attribute: General Science Option

Students must complete six General Science Options (GSOs) to meet graduation requirements in this program. The General Science Options must include:

- two GSOs at any course level
- two GSOs at the 2000 level or higher
- two GSOs at the 3000 level or higher

A student may choose any course with a *General Science Option attribute* provided they are able to:

- i. access the course: meaning the course is offered in the semester and is not restricted, and
- ii. the student meets the course prerequisites.

Any one General Science course cannot be used to satisfy more than one requirement within the major.

Please note: Some courses are only offered once per year and seats will be limited. Prerequisites, scheduling, and availability for all courses and prerequisites are subject to changes each semester and year.

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