



# Bachelor of Science – General Science

40 classes

Student name: \_\_\_\_\_  
Student ID: \_\_\_\_\_

MAJOR: General Science

24 core courses

- BIOL 1202
- BIOL 1204
- CHEM 1201
- COMP 1001
- MATH 1200
- PHYS 1201
- 2 of:
- GEOG 1101; GEOG 1103;
- GEOL 1101; GEOL 1103

Approved Science Options (16 courses):

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
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- \_\_\_\_\_

### General Education Requirements (GNED)

12 classes in total covering 3 levels in 4 clusters

#### FOUNDATION LEVEL

- GNED 1101 or 1102 \_\_\_\_\_
- GNED 1201, 1202, or 1203 \_\_\_\_\_
- GNED 1301 or 1302 \_\_\_\_\_
- GNED 1401/ENGL 1101, GNED 1402, or GNED 1403 \_\_\_\_\_

#### SECOND LEVEL

- One from cluster 1 list \_\_\_\_\_
- One from cluster 2 list \_\_\_\_\_
- One from cluster 3 list \_\_\_\_\_
- One from cluster 4 list \_\_\_\_\_

#### THIRD LEVEL

4 classes covering a minimum of 2 clusters from the level 3 list

- \_\_\_\_\_ Cluster \_\_\_\_\_
- \_\_\_\_\_ Cluster \_\_\_\_\_
- \_\_\_\_\_ Cluster \_\_\_\_\_
- \_\_\_\_\_ Cluster \_\_\_\_\_

#### Electives (4 courses)

Any credit level class offered in the course listings

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

### Approved Science Options:

Approved Science Options should be selected from the list located on the reverse. Students must select courses from a minimum of two different areas.

### BSc program notes:

For graduation purposes, a maximum of 16 junior courses can be used (i.e., courses at the 1000-level). When possible, students should select GNED and Elective courses at the 2000-level or higher.

A minimum grade of "C-" or higher in pre-requisite Science courses is required in order to enroll in higher level core courses.

See page 136-137 of MRU's calendar for information on continuance and progression in the BSc.

**Questions? Contact BSc Advising:**  
[scitechadvising@mtroyal.ca](mailto:scitechadvising@mtroyal.ca)

This guide has been created based on the current Mount Royal Calendar. Please refer for the MRU Calendar for a complete list of graduation requirements pertaining to your program.

**Approved Science Options for the General Science Major:** Note: Courses in *Italics* are under development

**Physical Sciences**

ASTR 1301 – Fundamentals of Astronomy I  
CHEM 1202 – General Chemistry II  
CHEM 1203 – An Introduction to Organic Chemistry  
CHEM 2101 – Organic Chemistry I  
CHEM 2102 – Organic Chemistry II  
CHEM 2205 – Computers in Chemistry  
CHEM 2211 – The Chemistry Between Us  
CHEM 2301 – Analytical Chemistry I: Quantitative Analysis  
CHEM 2302 – Analytical Chemistry II: Introduction to Instrumental Analysis  
CHEM 3103 – Advanced Organic Synthesis  
CHEM 3201 – Spectroscopy  
CHEM 3401 – Solid State  
CHEM 3601 – Thermodynamics  
CHEM 3602 – Elementary Quantum Mechanics  
CHEM 3801 – Nuclear Chemistry  
CHEM 3802 – The Science and Politics of Nuclear Energy  
CHEM 4213 – Drug Discovery  
CHEM 4701 – Molecular Modeling  
CHEM 5201 – Independent Projects I  
CHEM 5202 – Independent Projects II  
PHYS 1131 – Optics, Oscillations and Waves  
PHYS 1202 – Classical Physics II  
PHYS 1209 – Elementary Modern Physics  
PHYS 2201 – Waves and Optics  
PHYS 2203 – Electromagnetism  
PHYS 3103 – Introduction to Biophysics  
PHYS 3401 – Solid State  
PHYS 3601 – Thermodynamics  
PHYS 3602 – Elementary Quantum Mechanics

**Biological Sciences**

BCEM 2201 - General Biochemistry  
BCEM 3201 - Protein Biochemistry  
BCEM 3202 - Enzymes and Metabolic Systems  
BCEM 4212 - Biochemical Pharmacology  
BIOL 2101 - Genetics  
BIOL 2102 - How They Do It - Patterns of Reproduction  
BIOL 2202 - Cellular and Molecular Biology  
BIOL 2203 - Human Anatomy  
BIOL 2204 - Zoology II - Deuterosomes  
BIOL 2213 - Principles of Ecology and Evolution  
BIOL 2214 - Zoology I - Protosomes  
BIOL 2309 - Plants and People  
BIOL 3101 – Molecular Genetics  
BIOL 3102 – Intermediate Cell Biology  
BIOL 3103 - Introduction to Biophysics  
BIOL 3104 - Human Physiology I  
BIOL 3106 - Evolutionary Biology  
BIOL 3107 - Entomology  
BIOL 3108 - Conservation Biology  
BIOL 3203 – Genomes  
BIOL 3204 - Histology  
BIOL 3205 - Human Physiology II  
*BIOL 3209 - Behavioral Ecology*  
BIOL 3216 – Human Adaptation to Environmental Stress  
BIOL 4204 – Evolution in Health and Disease  
BIOL 4207 – Womb to Tomb: Embryology, Development, and Aging  
BIOL 5201 – Independent Projects I  
BIOL 5202 – Independent Projects II  
MIBI 2201 - Microbiology  
MIBI 3105 - Medical Microbiology

**Mathematics and Computer Science**

COMP 1502 - Programming II: Object Oriented Programming  
COMP 2503 - Programming III: Data Structures

COMP 1511 - Web I: Client Development  
COMP 2008 - Scientific Computing I  
COMP 2521 - Database I: Data Modeling and Query Languages  
COMP 2531 - Computer Architecture and Operating Systems  
COMP 2541 - Systems Analysis  
COMP 3008 - Scientific Computing II  
COMP 3012 - Robotics  
COMP 3313 - Introduction to Computability  
COMP 3504 - Programming IV: Best Practices in Design and Development  
COMP 3512 - Internet II: Web Application Development  
COMP 3532 - System Administration and Maintenance  
COMP 3533 - Network Infrastructure and Security  
COMP 3551 - GUI Development  
COMP 4513 - Web III: Advanced Web Development  
COMP 4522 - Database-II: Advanced Databases  
COMP 4535 - Computer Security  
COMP 4543 - Project Management and Quality Assurance  
COMP 4545 - Information Systems Organization  
COMP 4553 - Human Computer Interaction  
COMP 4555 - Games Development  
MATH 1202 - Calculus for Scientists II  
MATH 1203 - Linear Algebra for Scientists and Engineers  
MATH 1271 - Discrete Mathematics  
MATH 2101 - Abstract Algebra  
MATH 2301 - Calculus III  
MATH 2302 - Calculus IV  
MATH 2311 - Linear Algebra  
MATH 2321 - Mathematical Probability  
MATH 2323 - Introduction to Mathematical Statistics  
MATH 3101 - Numerical Analysis  
MATH 3303 - Topics in Applied Mathematics and Data Analysis  
MATH 3307 - Differential Equations  
MATH 4101: Abstract Algebra II  
MATH 4102 - Analysis  
MATH 4103 - Complex Numbers

**Earth Sciences**

GEOG 1101 - Physical Environment  
GEOG 1103 - Human Environment  
GEOG 1105 - Introduction to Mapping, GIS and Remote Sensing  
GEOG 2107 - Weather and Climate  
GEOG 2109 - Soil Characteristics and Formation  
GEOG 2111 - Landform Processes and Morphology  
GEOG 2437 - Biogeography  
GEOG 2445 - Environmental Problems and Resource Management  
GEOG 2553 - Geographic Information Systems  
GEOG 2555 - Introduction to Remote Sensing  
*GEOG 3107 - Advanced Biogeography*  
GEOG 3109 - Overseas Field Study in Physical Geography  
GEOG 3309 - Overseas Field Study in Human Geography  
*GEOG 3445 - Global Environmental Issues*  
*GEOG 3553 - Advanced GIS*  
GEOL 1101 - Physical Geology  
GEOL 1103 - Historical Geology  
GEOL 1151 - Introduction to the Petroleum Industry  
GEOL 2103 - Minerals and Rocks  
GEOL 2107 - Paleontology  
GEOL 2109 - Stratigraphy and Sedimentology  
GEOL 2151 - Environmental Geology and Earth Resources  
GEOL 2153 - Natural Hazards and Disasters  
GEOL 2155 - Geological History of Life  
GEOL 2157 - Water: Geologic and Geographical Issues  
GEOL 3107 - Geomorphology  
GEOL 4105 - Hydrogeology  
GEOL 4107 - Geology of Western Canada  
GEOL 4109 - Petroleum Geology  
GEOP 3101 - Exploration Geophysics