

Bachelor of Science - Computer Science 2021-22

PLEASE READ:

✓	YEAR ONE - Fall	✓	YEAR ONE - Winter
	COMP 1631 - Introduction to Computer Science I		COMP 1633 - Introduction to Computer Science II
	MATH 1200 - Calculus for Scientists I		MATH 1203 - Linear Algebra for Scientists and Engineers
	Cognate Course:		PHIL 1179 - Introduction to Symbolic Logic
	GNEDE Foundation Cluster 1: one of GNEDE 1101 or GNEDE 1103		Cognate Course:
	GNEDE Foundation Cluster 2: one of GNEDE 1201, 1202, or 1203		GNEDE Foundation Cluster 4: one of GNEDE 1401, 1403 or GNEDE 1404

Many courses are prerequisites for upper year courses. Check prerequisites at <http://catalog.mtroyal.ca/>
Cognate course choices can be found on page 2.

Prerequisites and course descriptions: can be found in the Academic Calendar under the 'courses' link at <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 course from each of the four clusters, three tier 2 GNEDs (one from each of cluster 2, 3, and 4), and three tier 3 GNEDs from at least two clusters, for a total of 10 GNED courses.

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

Prerequisites & Course descriptions can be found in the Academic Calendar or by visiting: catalog.mtroyal.ca under 'courses'.

✓	YEAR TWO - complete the following courses*	Notes
	COMP 2631 - Information Structures - <i>Fall</i>	
	COMP 2655 - Computing Machinery I - <i>Fall</i>	
	MATH 1271 - Discrete Mathematics - <i>Fall</i>	
	COMP 2633 - Foundations Software Engineering - <i>Winter</i>	
	COMP 2659 - Computing Machinery II - <i>Winter</i>	
	MATH 2234 - Mathematical Statistics	
	Cognate Course:	
	GNEDE Foundation Cluster 3: one of GNEDE 1301, 1303, or 1304	
	GNEDE Tier 2 Cluster 2:	
	GNEDE Tier 2 Cluster 3:	

*The *Fall/Winter* notations indicate when you should be planning to take core courses. 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 in one semester. If there is no notation, this course should be completed in year two but may be offered in either semester. It is your responsibility to plan your schedule and make sure that you are meeting necessary requirements. Consider consulting your advisor if you are uncertain or require clarification.

Advising Plan: This a suggested sequence for taking the required courses for your major. This plan factors in prerequisite requirements and will allow you to complete your degree in four years, provided you complete 5 courses per semester. This is just one example of how you can complete your degree requirements; you may find that a different sequence or smaller course load works better for you. To be considered full time, a student must be enrolled in a minimum of three, 3-credit courses.

YEAR THREE - complete the following courses			
✓	CORE course requirements:	✓	General Education and Electives:
	COMP 2613 - Introduction to Computability		GNEDE Tier 2 Cluster 4:
	COMP 3614 - Algorithms and Complexity		Elective course:
	COMP 3649 - Programming Paradigms		Elective course:
	COMP 3659 - Operating Systems		Elective course:
	Approved Option course:		
	Approved Option course:		

As you plan your courses be sure you are checking prerequisites at <http://catalog.mtroyal.ca/>
Approved Options and Approved Senior Options are listed on the right margin of this page.

- Approved Options: (Choose three)**
- COMP 2521 - Database I: Data Mod. & Query Language
 - COMP 3533 - Network Infrastructure and Security
 - COMP 3553 - Human-Computer Interaction
 - COMP 3612 - Web Development for Comp. Science
 - COMP 3625 - Artificial Intelligence
 - MATH 2101 - Abstract Algebra
 - MATH 2200 - Calculus for Scientists II
- *Courses used as approved options cannot also be used to satisfy the requirements for the cognate

YEAR FOUR- complete the following courses			
✓	CORE course requirements:	✓	General Education and Electives:
	COMP 3309 - Information Technology and Society		GNEDE Tier 3 (cluster ___):
	Approved Option course:		GNEDE Tier 3 (cluster ___):
	Approved Senior Option:		GNEDE Tier 3 (cluster ___):
	Approved Senior Option:		Elective course:
	Approved Senior Option:		
	Cognate Course:		

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

- Approved Senior Options: (Choose three)**
- COMP 4513 - Web III: Advanced Web Development
 - COMP 4555 - Games Development
 - COMP 4622 - Advanced Databases
 - COMP 4630 - Machine Learning
 - COMP 4633 - Advanced Software Engineering
 - COMP 4635 - Distributed Systems
 - COMP 5690 - Senior Computer Science Project
 - MATH 3101 - Numerical Analysis
- *Courses used as approved options cannot also be used to satisfy the requirements for the cognate

This document is only intended to be a guide for students and should be used together with the Mount Royal University Academic Calendar which states academic policies and degree requirements. Be sure to consult with your Academic Advisor to confirm graduation requirements of if you have any questions.

Approved Cognate Courses:

Note: Courses used as approved options cannot also be used to satisfy the requirements for the cognate

Astronomy:

ASTR 2107: Celestial Mechanics and Relativity

MATH 2200: Calculus for Scientists II

PHYS 1201: Classical Physics I

One of:

ASTR 1301: Planetary Astronomy

ASTR 1303: Stars, Galaxies, and Cosmology

Biology:

BIOL 1202: Introduction to Cell Biology

BIOL 1204: The Evolution of Eukaryotes

Any two additional BIOL prefixed courses at the 2xxx-level or higher

Chemistry:

CHEM 1201: General Chemistry – Structure and Bonding

CHEM 1202: General Chemistry – Introduction to Quantitative Chemistry

Any two additional CHEM prefixed courses at the 2xxx-level or higher

Geographic Information Systems:

GEOG 1101: The Physical Environment

GEOG 1105: Intro to Mapping, GIS and Remote Sensing

GEOG 2553: Geographic Information Systems

GEOG 3553: Spatial Analysis and GIS

Geoscience:

GEOL 1101: The Dynamic Earth

GEOL 1103: Earth Through Time

Any two additional GEOL prefixed courses at the 2xxx-level or higher*

**GEOL 2151, 2153, 2155, and 2157 may not be used towards the cognate*

Mathematics (choose four from):

MATH 2101: Abstract Algebra

MATH 2200: Calculus for Scientists II

MATH 2311: Linear Algebra II

MATH 3101: Numerical Analysis

MATH 3200: Mathematical Methods

Physics:

MATH 2200: Calculus for Scientists II

PHYS 1201: Classical Physics I

PHYS 1202: Classical Physics II

PHYS 2201: Acoustics, Optics, and Radiation