Bachelor of Science – Computer Science 2026/27

MOUNT ROYAL UNIVERSITY
Faculty of Science and Technology

✓	YEAR ONE – Fall	✓	YEAR ONE – Winter
	COMP 1701 – Introduction to Problem Solving and Programming		COMP 1633 – Introduction to Computer Science II
	MATH 1200 – Calculus for Scientists I		PHIL 1179 – Introduction to Symbolic Logic
	MATH 1203 – Linear Algebra for Scientists and Engineers		MATH 1271 – Discrete Mathematics
	GNED Foundation Cluster 1: one of GNED 1101 or GNED 1103		GNED Foundation Cluster 4: one of GNED 1401, 1403 or GNED 1404
	GNED Foundation Cluster 2: one of GNED 1201, 1202, or 1203		Cognate Course, see pg. 2

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

✓	YEAR TWO – Complete the Following Courses		
	COMP 2631 – Information Structures		COMP 2633 – Foundations Software Engineering
	COMP 2655 – Computing Machinery I		COMP 2659 – Computing Machinery II
	Cognate Course, see pg. 2		MATH 2234 – Mathematical Statistics
	GNED Foundation Cluster 3: one of GNED 1301, 1302, or 1303		Cognate Course, see pg. 2
	GNED Tier 2 Cluster 2:		GNED Tier 2 Cluster 3:

✓	YEAR THREE – Complete the Following Courses		
	COMP 2613 – Introduction to Computability		COMP 3614 – Algorithms and Complexity
	COMP 3659 – Operating Systems		COMP 3649 – Programming Paradigms
	Approved Option:		Approved Option:
	GNED Tier 2 Cluster 4:		GNED Tier 3 (cluster ___):
	Elective course:		Elective course:

✓	YEAR FOUR – Complete the Following Courses		
	COMP 3309 – Information Technology and Society		Cognate Course, see pg. 2
	Approved Option:		Approved Senior Option:
	Approved Senior Option:		Approved Senior Option:
	GNED Tier 3 (cluster ___):		GNED Tier 3 (Cluster ___):
	Elective course:		Elective course:

Approved Options List: Choose **six** courses from below. **At least three** courses must be Approved 4000 or Higher Level Options. Courses used as approved options cannot also be used to satisfy cognate requirements.

Approved Options

MATH 2101 – Abstract Algebra
MATH 2200 – Calculus for Scientists II
MATH 3101 – Numerical Analysis
COMP 3533 – Network Infrastructure and Security
COMP 3553 – Human–Computer Interaction
COMP 3612 – Web Development for CS
COMP 3625 – Artificial Intelligence
COMP 3654 – Usable Privacy and Security
COMP 3700* – Special Topics in Computing

Approved 4000 or Higher Level Options

MATH 4111 – Cryptography
COMP 4513 – Web III: Advanced Web Development
COMP 4422 – Big Data Database Management
COMP 4555 – Games Development
COMP 4622 – Advanced Databases
COMP 4630 – Machine Learning
COMP 4633 – Advanced Software Engineering
COMP 4615 – Algorithms II
COMP 4635 – Distributed Systems
COMP 5690 – Senior Computer Science Project
DATA 4734 – Network Science: Techniques and Applications

*COMP 3700 is a topics courses that can change from semester to semester. Some special topics subjects are suitable for CS majors, while others are not. Please see Advising for more details.

PLEASE READ:

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.

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.

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.

Approved Cognate Courses: In the Computer Science degree, students must complete a 4-course cognate in a related discipline within Science that compliments their major. Please choose one cognate discipline from the approved list below:

Astronomy: MATH 2200 – Calculus for Scientists II PHYS 1201 – Classical Physics I One of: ASTR 1301 – Planetary Astronomy ASTR 1303 – Stars, Galaxies, and Cosmology One of: ASTR 2107 – Celestial Mechanics and Relativity ASTR 3107 – Physical Cosmology	**Biology:** BIOL 1202 – Introduction to Cell Biology (*restricted to Biology students in the fall semester*) BIOL 1204 – The Evolution of Eukaryotes (*restricted to Biology students in the winter semester*) 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	**Data Science:** Choose any four from the following: DATA 2721 – Data Science I: Introduction to Databases MATH 2200 – Calculus for Scientists II MATH 2303 – Linear Algebra for Data Science MATH 2444 – Statistical Data Analysis MATH 3454 – Regression and Time Series Analysis MATH 4303 – Fourier Analysis for Data Science
Geographic Information Systems: GEOG 2553 – Geographic Information Systems GEOG 4553 – Advanced Spatial Analysis and GIS Any two additional GEOG prefixed courses (GEOG 1105 is recommended).	**Geoscience:** GEOL 1201 (formerly GEOL 1101) – The Dynamic Earth GEOL 1202 (formerly GEOL 1103) – Earth Through Time Any two additional GEOL prefixed courses at the 2XXX–level or higher* ***Note*** **GEOL 2151, 2153, 2155, and 2157 may not be used towards the cognate*
Mathematics: Choose any four from the following: MATH 2101 – Abstract Algebra MATH 2200 – Calculus for Scientists II MATH 2311 – Linear Algebra II MATH 3101 – Numerical Analysis MATH 3200 – Mathematical Methods MATH 4111 – Cryptography	**Physics:** MATH 2200 – Calculus for Scientists II PHYS 1201 – Classical Physics I PHYS 1202 – Classical Physics II One of: PHYS 2201 – Acoustics, Optics, and Radiation PHYS 2203 – Electromagnetism