

Bachelor of Science – Chemistry (Conc. in Analytical Biochemistry) 2021-22

✓ YEAR ONE - Fall		✓ YEAR ONE - Winter	
	MATH 1200 - Calculus for Scientists I		BIOL 1202 - Introduction to Cell Biology
	CHEM 1201 - General Chemistry - Structure and Bonding		CHEM 1202 - General Chemistry - Introduction to Quantitative Chemistry
	PHYS 1201 - Classical Physics I		PHYS 1202 - Classical Physics II
	GNED Foundation Cluster 1: one of GNED 1101 or 1103		MATH 2200 - Calculus for Scientists II
	GNED Foundation Cluster 4: one of GNED 1401, 1403 or 1404		GNED Foundation Cluster 2: one of GNED 1201, 1202, or 1203

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

✓ YEAR TWO - complete the following courses*	
	CHEM 2101 - Organic Chemistry I - <i>Fall</i>
	CHEM 2301 - Analytical Chemistry I - <i>Fall</i>
	COMP 2001- Programming for the Sciences - <i>Fall</i>
	BIOL 1204 - The Evolution of Eukaryotes - <i>Fall</i>
	CHEM 2102 - Organic Chemistry II - <i>Winter</i>
	CHEM 2302 - Analytical Chemistry II - <i>Winter</i>
	BCEM 2201 - General Biochemistry - <i>Winter</i>
	BIOL 2101 - Genetics - <i>Winter</i>
	GNED Foundation Cluster 3: one of GNED 1301, 1303 or 1304
	GNED Tier 2 Cluster 2:

*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.

YEAR THREE - complete the following courses			
✓	CORE Requirements:	✓	General Education and Electives:
	CHEM 2401 - Inorganic Chemistry		GNED Tier 2 Cluster 3:
	CHEM 2601 - Physical Chemistry		GNED Tier 2 Cluster 4:
	CHEM 3200 - Research Methods in Chemistry		Elective course:
	CHEM 3601 - Thermodynamics		
	BCEM 3201 - Protein Biochemistry		
	BCEM 3202 - Enzymes and Metabolic Systems		
	BIOL 2202 - Cellular and Molecular Biology		

As you plan your courses be sure you are checking prerequisites at <http://catalog.mtroyal.ca/>

YEAR FOUR - complete the following courses			
✓	CORE Requirements:	✓	General Education and Electives:
	CHEM 4301 - Advanced Analytical Chemistry		GNED Tier 3 (Cluster ___):
	BCEM 4201 - Lipids and Membranes - <i>in development</i>		GNED Tier 3 (Cluster ___):
	BCEM 4210 - Topics in Structural Biology		GNED Tier 3 (Cluster ___):
	BCEM 5200 - Analytical Biochemistry in a Community Context		Elective course:
			Elective course:
			Elective course:

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

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 from each of the four clusters, three tier 2 GNEDs (one from each of cluster 2, 3, and 4), and a total of three tier 3 GNEDs from at least two clusters, for a total of 10 GNED courses.

For more information and a list of GNED courses, visit mtroyal.ca/gened and click 'courses' on the left-hand navigation.

Junior courses: are courses at the 1000 level. Students are allowed a maximum of sixteen junior courses for graduation purposes.

Electives: an elective is any three-credit course. It is advised that students in this major 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 indicated below. Deviation from the recommended course pattern may result in scheduling conflicts.

To be considered full time, a student must be enrolled in a minimum of 9 credit hours or three, 3-credit courses.

Community Service Learning requires three courses with the 'CSL' designation, learn more here: mru.ca/csl – your Chemistry major may qualify.

Declaring concentrations: students are encouraged to declare the Analytical Biochemistry concentration at the Registrar's Office in A101 or by email to studentrecords@mtroyal.ca as soon as possible.