

## Science Profile (120 extended credit programs, i.e. non-CEGEP entry, only)

Chemistry:	CHEM 205 & 206 (General Chemistry I & II)
Biology:	BIOL 201 (General Biology)
Math:	MATH 201 (Elementary Functions), MATH 202 (College Algebra, <i>required for Mature Students only</i> ), MATH 203 (Calculus I), MATH 205 (Calculus II)
Physics:	PHYS 204/224 (Mechanics and associated lab course), PHYS 205/225 (Electricity & Magnetism and associated lab course), PHYS 206/226 (Waves and Modern Physics & associated lab course)

## Biochemistry Core Program (45 credits = 15 courses)

Analytical Chemistry:	CHEM 217 (Introductory Analytical Chemistry I, offered Fall only) CHEM 218 (Introductory Analytical Chemistry II, offered Winter only) <i>Exemptions for both courses possible for students entering from Dawson's Laboratory Technology – Analytical Chemistry program</i>
Organic Chemistry:	CHEM 221 (Introductory Organic Chemistry I, offered Fall, Winter and alternating Summers) CHEM 222 (Introductory Organic Chemistry II, offered Fall and Winter) CHEM 324 (Organic Reactions, offered Fall and Winter) <i>Exemptions for CHEM 221 and CHEM 222 possible for CEGEP students</i>
Physical Chemistry:	CHEM 234 (thermodynamics, offered Fall and Winter) CHEM 235 (kinetics, offered Fall and Winter)
Inorganic Chemistry:	CHEM 241 (Introduction to Periodicity and Valence Theory, offered Fall and Winter)
Biochemistry:	CHEM 271 (Biochemistry I, offered Fall, Winter and alternating Summers) CHEM 375 (Biochemistry II, offered Fall, Winter and Summer)
Spectroscopy:	CHEM 293 (Organic Spectroscopy, offered Winter and Summer)
Biology:	BIOL 261 (Molecular and General genetics), BIOL 266 (Cell Biology), BIOL 364 (Cell Physiology), BIOL 368 (Genetics and Cell Biology Lab); all offered Fall and Winter

## Biochemistry Specialization = core (above) PLUS additional credits at the advanced level

Analytical Chemistry:	CHEM 312 (Intermediate Analytical Chemistry, Fall and alternating Summers) <i>Lab exemption possible for students entering from Dawson's Laboratory Technology – Analytical Chemistry program</i>
Organic Chemistry:	CHEM 325 (Organic Structure and Stereochemistry, Winter and alternating Summers)
Physical Chemistry:	CHEM 335 (Biophysical Chemistry, offered Winter only)
Biology:	BIOL 367 (Molecular Biology, offered Fall and Winter)
Advanced Labs:	CHEM 477 (Advanced Laboratory in Biochemistry, offered Fall only) BIOL 466 (Advanced Techniques in Molecular Biology, offered Winter only)
Biochemistry electives:	2 x 400-level courses (CHEM 4XX) chosen from advanced topics courses in biochemistry
Research project:	optional CHEM 419 (6 credits, Independent Study in an active research lab of one of our faculty members, 1 or 2 terms, all terms available, presented as a conference-style poster). If taken, replaces one advanced lab course (CHEM 477 or BIOL 466) and one elective.

## Course numbering system

First digit gives level	200 = introductory	300 = intermediate	400 = advanced				
Middle number denotes discipline	1 = analytical,	2 = organic,	3 = physical,	4 = inorganic,	5 = multidisciplinary,	7 = biochemistry,	9 = spectroscopy/spectrometry

Last digit gives sequence

## Typical Biochemistry Specialization Sequence (entering with CHEM 221 from CEGEP)\*

- entering with CHEM 221 from CEGEP      - entering from profile year

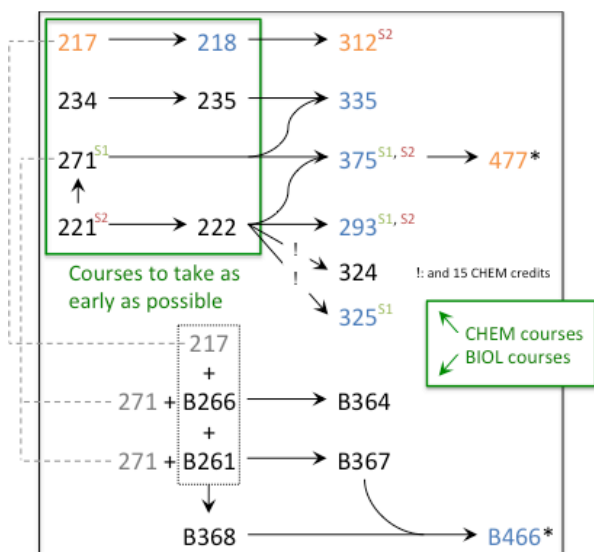
	Fall	Winter
Year 1	CHEM 217 CHEM 222 CHEM 234 BIOL 261 or CHEM 271 elective	CHEM 218 CHEM 235 or 241 CHEM 271 or BIOL 261 BIOL 266 elective
Year 2	CHEM 312 CHEM 324 CHEM 235 or 241 BIOL 364 or 367 or 368 elective	CHEM 293 CHEM 325 CHEM 335 CHEM 375 elective
Year 3	CHEM 4XX CHEM 477 organic repl. BIOL 364 or 367 or 368 elective	CHEM 4XX BIOL 364 or 367 or 368 CHEM 419** elective

	Fall	Winter
Year 1	CHEM 217 CHEM 221 CHEM 234 BIOL 261 or CHEM 271 elective	CHEM 218 CHEM 222 CHEM 235 or 241 CHEM 271 or BIOL 261 elective
Year 2	CHEM 324 or 312 CHEM 235 or 241 BIOL 266 BIOL 367 elective	CHEM 293 CHEM 325 CHEM 335 CHEM 375 elective
Year 3	CHEM 312 or 324 CHEM 4XX CHEM 477 BIOL 364 or 368 elective	CHEM 4XX BIOL 364 or 368 CHEM 419** elective

\* All courses are 3 credits except where noted. There are eighteen (18) credits of electives that must include six (6) credits of general education courses and twelve (12) credits of out of program electives. All electives must be out of program (non CHEM). Some courses can be taken in Summer or online.

\*\* CHEM 419 is a 6-credit course. It replaces (BIOL 466 + 1 elective) or (CHEM 477 + 1 elective). CHEM 419 can also be taken over Fall and Winter when research is carried out on both terms, in which case it can count as 3 credits in the Fall and 3 credits in the Winter. This course is offered every term, including Summer.

## Biochemistry Specialization Course Flowchart



Legend: 221  $\xrightarrow{\text{is a prerequisite for}}$  222

Additional courses:

- 241
- 4XX (2x)
- 419\* (6 credits)
- 7 electives\*
- Organic replacement(s) if exempt from 221 &/or 222

\* options:

- 477 & B466
- 477 & 419 minus 1 elective
- B466 & 419 minus 1 elective

Summer course offerings:

Summer 1	alternating with	Summer 2
ODD years		EVEN years
206		206
293		293
375		375
271	$\longleftrightarrow$	221
325	$\longleftrightarrow$	312

Terms when courses are traditionally offered:

- Fall & Winter
- Fall only
- Winter only
- and sometimes on:
- Summer 1 (ODD years)
- Summer 2 (EVEN years)

Up-to-date information on Calendar website and postings