

#### **BIOCHEMISTRY HONOURS**

#### 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, required for Mature

Students only), 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)

Exemptions for both courses possible for students entering from Dawson's Laboratory

Technology – Analytical Chemistry program

Organic Chemistry: CHEM 221 (Introductory Organic Chemistry I, offered Fall, Winter and some Summers)

CHEM 222 (Introductory Organic Chemistry II, offered Fall and Winter)

CHEM 324 (Organic Reactions, offered Fall only)

Exemptions for CHEM 221 and CHEM 222 possible for CEGEP students

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 odd-year Summers)

CHEM 375 (Biochemistry II, offered Winter and Summer)

Spectroscopy: CHEM 293 (Organic Spectroscopy, offered every term)

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 Honours = core (above) PLUS additional credits at the advanced level

Analytical Chemistry: CHEM 312 (Intermediate Analytical Chemistry, offered Fall and even-year Summers)

Lab exemption possible for students entering from Dawson's Laboratory Technology —

Analytical Chemistry program

Organic Chemistry: CHEM 325 (Organic Structure and Stereochemistry, offered Winter and odd-year Summers)

Physical Chemistry: CHEM 335 (Biophysical Chemistry, offered Fall only)

Biology: BIOL 367 (Molecular Biology, offered Fall and Winter)

Advanced Labs: CHEM 477 (Advanced Laboratory in Biochemistry, offered Fall only)

OR BIOL 466 (Advanced Techniques in Molecular Biology, offered Winter only)

Biochemistry electives: 2 x 400-level courses (CHEM 4XX) chosen form advanced topics courses in biochemistry

Research project: CHEM 450 (6 credits, Honours research carried out in an active research lab of one of our

faculty members, 1 or 2 terms, all terms available, written thesis defended before a

committee)

## **Course numbering system**

First digit gives level 200 = introductory 300 = intermediate 400 = advanced

Middle digit 1 = analytical, 2 = organic, 3 = physical, 4 = inorganic, 5 = multidisciplinary,

denotes discipline 7 = biochemistry, 9 = spectroscopy/spectrometry

Last digit gives sequence



### **BIOCHEMISTRY HONOURS**

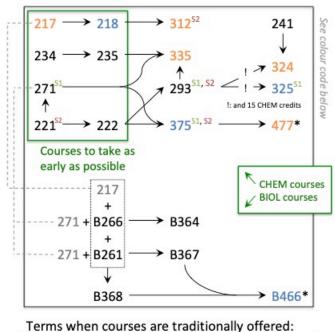
Typical Biochemistry Honours Sequence (entering with CHEM 221 from CEGEP)\* - entering with CHEM 221 from CEGEP - entering from profile year

	Fall	Winter
Year 1	CHEM 217	CHEM 218
	CHEM 222	CHEM 241
	CHEM 234	CHEM 293
	BIOL 261 or CHEM 271	CHEM 271 or BIOL 261
	elective	elective
Year 2	CHEM 312	CHEM 325
	CHEM 235	CHEM 375
	CHEM 324	CHEM 4XX
	BIOL 266	BIOL 364, 367 or 368
	elective	elective
Year 3	CHEM 335	organic repl.
	CHEM 477	BIOL 364, 367 or 368
	CHEM 450**	CHEM 450**
	BIOL 364, 367 or 368	CHEM 4XX
	elective	elective

	Fall	Winter
Year 1	CHEM 217	CHEM 218
	CHEM 221	CHEM 222
	CHEM 234	CHEM 235 or 241
	BIOL 261 or CHEM 271	CHEM 271 or BIOL 261
	elective	elective
Year 2	CHEM 312	CHEM 293
	CHEM 235 or 241	CHEM 375
	BIOL 266	CHEM 4XX
	BIOL 367	BIOL 364 or 368
	elective	elective
Year 3	CHEM 324	CHEM 325
	CHEM 335	CHEM 4XX
	CHEM 450**	CHEM 450**
	CHEM 477	BIOL 364 or 368
	elective	elective

<sup>\*</sup> 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.

### **Biochemistry Honours Course Flowchart**



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

# Legend: 221

#### Additional courses:

- 4XX (2x) (Fall & Winter only)
- 450 (6 credits)
- · Organic replacement(s) if exempt from 221 &/or 222
- 6 electives
- \* options:
- 477 or B466

#### Summer course offerings:

Summer 1	alternating with	Summer 2
ODD years		EVEN years
271		221
293		293
375		375
325 <-		→ 312
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Up-to-date info on Class Schedule Guide & Dept website

<sup>\*\*</sup> CHEM 450 is a 6-credit course that is offered every term, including Summer. However, we recommend to take it over two terms. If taken over Fall and Winter, it counts as 3 credits in the Fall and 3 credits in the Winter.