

## Bachelor of Science (CHEMICAL BIOLOGY MAJOR) Checklist

### HIGH SCHOOL PREREQUISITES FOR FIRST YEAR SCIENCE

Subject	First Year Courses at TRU	Prerequisites	Other High School Courses & Lower Grades	Recommended TRU Upgrading Courses
<b>ENGLISH</b>	ENGL 1100 (recommended) or ENGL 1110, 1120, 1140, 1210, or CRWR 1150	English Studies 12 with 73% or higher	English 12 below 73% →	ENGL 0600 or English Accuplacer (placement test)
<b>MATH</b>	MATH 1150 AND MATH 1250 (recommended for Biology majors) or MATH 1140 AND MATH 1240 (recommended for other majors)	Pre-Calculus 12 with 67% or higher within the last 2 years	Pre-Calculus 12 below 67% →	MATH 0600 + 0610 or MATH 0630 or MATH 1000
			Foundations of Math stream →	MATH 0510 + 0630 or MATH 0510 + 0600 + 0610
			Other streams of Math or No Math in the last 2 years →	Math Accuplacer recommended (placement test)
<b>BIOLOGY</b>	BIOL 1210 AND BIOL 1110	Life Sciences 11 <b>or</b> Anatomy & Physiology 12 <b>AND</b> Chemistry 11 all with 67% or higher	If you need: Life Sciences 11 <b>OR</b> Anatomy & Physiology 12 →	BIOL 0500 or BIOL 0600 (1 course required, not both)
			If you need: Chemistry 11 →	CHEM 0500
<b>CHEMISTRY</b>	CHEM 1500 AND CHEM 1510	Pre-Calculus 12 <b>AND</b> Chemistry 11 both with 67% or higher	If you need: Pre-Calculus 12 →	See MATH section above
	CHEM 1500 AND CHEM 1520	Pre-Calculus 12 <b>AND</b> Chemistry 12 both with 73% or higher	If you need: Chemistry 11 → (Chemistry 12 not required)	CHEM 0500
<b>PHYSICS</b>	PHYS 1100 AND PHYS 1200	Pre-Calculus 12 <b>AND</b> Physics 11 both with 67% or higher	If you need: Pre-Calculus 12 →	See Math section above
	PHYS 1150 AND PHYS 1250	Pre-Calculus 12 <b>AND</b> Physics 12 both with 67% or higher	If you need: Physics 11 → (Physics 12 not required)	PHYS 0500

**Note:** For best chances of academic success, completion of the grade 12 level of the subject area of your intended major is recommended. (e.g. for a Physics major, you should have Grade 12 Physics). High school equivalent courses can be taken or repeated at TRU.

## SUGGESTED FIRST- AND SECOND-YEAR PLAN

### YEAR 1

FALL SEMESTER	WINTER SEMESTER
ENGL 1100 <b>or</b> 1110	ENGL 1100 <b>or</b> 1110 <b>or</b> 1120 <b>or</b> 1140 <b>or</b> 1210
BIOL 1210	BIOL 1110
CHEM 1500	CHEM 1510 <b>or</b> 1520
MATH 1140	MATH 1240
PHYS 1100 <b>or</b> 1150	PHYS 1200 <b>or</b> 1250

### YEAR 2

FALL SEMESTER	WINTER SEMESTER
CHEM 2120	CHEM 2220
CHEM 2100	BIOL 2130
CHEM 2160	BIOL 2340
BIOL 2160	CHEM 2250
Non-Science Elective (or COMP 3 credits – see note #4 next page)	CMNS 2300 <b>or</b> 2290

## COURSE OFFERINGS – First and Second Year

**Note:** Many science and math courses are offered in either Fall **or** Winter semester only, not both

FALL SEMESTER ONLY	WINTER SEMESTER ONLY
<p><b>BIOLOGY:</b></p> <ul style="list-style-type: none"> <li>• BIOL 1210</li> <li>• BIOL 2160</li> <li>• BIOL 2170</li> <li>• BIOL 2280</li> </ul> <p><b>CHEMISTRY:</b></p> <ul style="list-style-type: none"> <li>• CHEM 1500</li> <li>• CHEM 2100</li> <li>• CHEM 2120</li> <li>• CHEM 2160</li> </ul> <p><b>MATH:</b></p> <ul style="list-style-type: none"> <li>• MATH 1150</li> <li>• MATH 2110</li> <li>• MATH 2210</li> <li>• MATH 2240</li> </ul> <p><b>PHYSICS:</b></p> <ul style="list-style-type: none"> <li>• PHYS 1150</li> <li>• PHYS 2000</li> </ul>	<p><b>BIOLOGY:</b></p> <ul style="list-style-type: none"> <li>• BIOL 1110</li> <li>• BIOL 2130</li> <li>• BIOL 2340</li> <li>• BIOL 2290</li> </ul> <p><b>CHEMISTRY:</b></p> <ul style="list-style-type: none"> <li>• CHEM 1510 <b>or</b> 1520</li> <li>• CHEM 2220</li> <li>• CHEM 2250</li> </ul> <p><b>COMMUNICATIONS:</b></p> <ul style="list-style-type: none"> <li>• CMNS 2300</li> </ul> <p><b>MATH:</b></p> <ul style="list-style-type: none"> <li>• MATH 1250</li> <li>• MATH 2200</li> <li>• MATH 2700</li> <li>• MATH 3170</li> </ul> <p><b>PHYSICS:</b></p> <ul style="list-style-type: none"> <li>• PHYS 1250</li> <li>• PHYS 2200</li> <li>• PHYS 2590</li> <li>• PHYS 3120 / MATH 3160</li> </ul>

## Bachelor of Science Degree – CHEMICAL BIOLOGY MAJOR Checklist (120 credits)

1000-Level CORE courses (30-33 credits)			2000-Level CORE courses (27 credits)			3000/4000-Level courses (39-41 credits)			
COURSE		GRADE	COURSE		GRADE	COURSE		GRADE	
ENGL 1100 or 1110 <sup>1,2</sup>		_____	BIOL 2130 - Cell Biology		_____	CHEM 3100 - Instrumental Analysis		_____	
ENGL 1100, 1110, 1120, 1140 or 1210 <sup>1,2</sup>		_____	BIOL 2340 - Introduction to Genetics		_____	CHEM 3170 - Instrumental Analysis Lab (1 credit)		_____	
			BIOL 2160 - Introductory Microbiology		_____	CHEM 3220 - Advanced Organic Chemistry		_____	
BIOL 1110 - Principles of Biology 1		_____	CHEM 2100 - Introductory Analytical Chem		_____	CHEM 3230 – Organic Spectroscopy		_____	
BIOL 1210 - Principles of Biology 2		_____	CHEM 2120 - Organic Chemistry 1		_____	CHEM 3240 - Organic Chemistry Lab (1 credit)		_____	
CHEM 1500 - Chemical Bonding/Organic Chem		_____	CHEM 2220 - Organic Chemistry 2		_____	CHEM 4450 - Advanced Chemical Biology		_____	
CHEM 1510 or 1520		_____	CHEM 2160 - Structure, Bonding & Spectroscopy		_____	BIOL 3000 - Biometrics		_____	
MATH 1140 (or 1150) -Calculus 1		_____	CHEM 2250 - Fundamentals of Physical Chemistry		_____	BIOL 3130 - Introduction to Biochemistry		_____	
MATH 1240 (or 1250) -Calculus 2		_____	CMNS 2290 or 2300		_____	BIOL 3230 - Biochemistry		_____	
PHYS 1100 or 1150		_____	<b>Electives (21-24 credits)</b>			BIOL 3350 - Molecular Genetics		_____	
PHYS 1200 or 1250		_____		COURSE	GRADE	BIOL 3520 - Cell Physiology		_____	
COMP 3 credits <sup>1,4</sup>		_____	Non-Science elective <sup>3</sup>		_____	BIOL 4150 - Biochemical Techniques 1		_____	
<b>Notes:</b> 1. Must be taken prior to 3 <sup>rd</sup> year 2. Students with a B or better in ENGL 1100 (or 1110) may proceed to either of the required CMNS courses (CMNS 2290 or 2300) in their second-year; students with less than a B in first-year English courses must take another 3 credits of first-year English (ENGL 1120, 1140 or 1210) before their second-year English requirement. 3. Non-Science electives must be in at least two different subject areas (other than English). 4. The 3 credits of COMP may be COMP 1020/1030/and one other 1-credit COMP <u>OR</u> COMP 1110 <u>OR</u> COMP 1130. 5. The <b>Chemical Biology Honours</b> program requires the completion of 126 credits, including the 117 credits required, as well as CHBI 3980-1 (Introduction to Research), CHBI 4980-2 (Honours Seminar) and CHBI 4990-6 (Honours Thesis). Students must apply for admission to the Honours program at the end of their third year.		Non-Science elective <sup>3</sup>		_____	_____	BIOL 4250 - Biochemical Techniques 2		_____	
		Non-Science elective <sup>3</sup>		_____	_____	<b>Chemical Biology Electives: (4 - 6 credits) from:</b> CHEM 3060, CHEM 3140, CHEM 3310, CHEM 3330, CHEM 4220, CHEM 4320, CHEM 4400, CHEM 4420L, CHEM 4480, CHEM 4600, BIOL 3010, BIOL 3200, BIOL 3510, BIOL 3540, BIOL 3550, BIOL 4350, BIOL 4480, BIOL 4490, PHIL 4330, PHIL 4350			
		Elective in lieu of 2 <sup>nd</sup> ENGL <sup>2</sup>		_____	_____				
		General elective (1000-4000 level)		_____	_____				
				_____	Upper-level elective		_____	_____	CHEM BIOL elective
		_____	Upper-level elective		_____	_____	CHEM BIOL elective		_____
		_____	Upper-level elective		_____	_____	CHEM BIOL elective		_____
		_____	<b>Electives:</b>			<b>Honours Program Courses</b>			
		_____	<b>Institutional Learning Outcomes (ILOs) may be required to graduate.</b> Refer to the <a href="#">Degree Works website</a> for more information.			CHBI 3980 – Introduction to Research			_____
		_____				CHBI 4980 – Honours Seminar			_____
		_____				CHBI 4990 – Honours Thesis			_____
<b>*NEW</b> Institutional Learning Outcomes (ILO) Requirements – your <a href="#">Degree Works Program Plan</a> is available through <a href="#">myTRU</a>									

## KEEP IN MIND

### Institutional Learning Outcomes (ILOs):

May be required for your program. Using the **Degree Works** planning tool will help you identify which courses apply.

### Degree Works Planning Tool:

More information is available through the Degree Works website at: [tru.ca/current/academic-supports/degreeworks](https://tru.ca/current/academic-supports/degreeworks)

## BACHELOR OF SCIENCE – FIRST- AND SECOND-YEAR NON-SCIENCE ELECTIVES

Anthropology (ANTH)	All	Linguistics (LING)	All
Archaeology (ARCH)	All	Management (MNGT)	1710
Accounting (ACCT)	2210, 2250	Marketing (MKTG)	2430
Business Law (BLAW)	2910	Modern Languages (MLAN)	All
Chinese (CHIN)	1110, 1210	Music (MUSI)	All
Communications (CMNS)	All	Organizational Behaviour (ORGB)	2810
Creative Writing (CRWR)	All	Philosophy (PHIL)	All
Economics (ECON)	All	Physical Education (PHED) non-Activity	1000, 1230, 2110, 2130, 2140, 2210
French (FRAN)	All	Political Studies (POLI)	All
Film (FILM)	All	Psychology (PSYC)	All
Finance (FNCE)	2120	Service & Community Learning (SRCL)	1000
First Nation Language (FNLG)	All	Sociology (SOCL)	All
Geography (GEOG) (non-physical)	1010, 1100, 1110, 2110, 2120, 2220, 2230 (excluded: GEOG 1000, 2020)	Spanish (SPAN)	All
German (GERM)	All	Speech (SPEE)	1500, 2500
History (HIST)	All 1000 level & 2000 level	Student Success (STSS)	1010, 1020
Human Resource Management (HRMN)	2820	Theatre (THTR)	All
Indigenous Studies (INDG)	2100	Visual Arts (VISA) (Theory)	All
Japanese (JAPA)	All	Visual Arts (VISA) (Studio)	All
Journalism (JOUR)	2010		