

## Bachelor of Science (CHEMICAL BIOLOGY MAJOR) Checklist

### HIGH SCHOOL PREREQUISITES

ENGLISH		
IF YOU TOOK	YOUR GRADE	CHOOSE
English Studies 12 <b>or</b> English First Peoples 12 <b>or</b>	73% or higher	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <span style="font-size: 2em;">}</span> </div> <div>           ENGL 1100 (recommended) <b>or</b> ENGL 1110 <b>or</b>            ENGL 1120 <b>or</b> ENGL 1140 <b>or</b> 1150 <b>or</b> ENGL 1210         </div> </div>
ESAL 0570 <b>and</b> 0580 <b>or</b>	65% or higher	
ENGL 0600 <b>or</b> ENGL 0620	65% or higher	
English Studies 12 <b>or</b> English First Peoples 12	Below 73%	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <span style="font-size: 2em;">→</span> </div>           ACCUPLACER Assessment <b>or</b> ENGL 0600 <b>or</b> 0620         </div>
BIOLOGY		
IF YOU TOOK	YOUR GRADE	CHOOSE
Life Sciences 11 <b>or</b> Biology 11 <b>or</b> Anatomy & Physiology 12 <b>or</b> Biology 12 <b>AND</b> Chemistry 11	67% or higher	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <span style="font-size: 2em;">→</span> </div>           BIOL 1110 <b>AND</b> 1210         </div>
Life Sciences 11 <b>or</b> Biology 11	Below 67%	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <span style="font-size: 2em;">→</span> </div>           BIOL 0500         </div>
IF YOU NEED		
Life Sciences 11 <b>or</b> Biology 11		<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <span style="font-size: 2em;">→</span> </div>           BIOL 0500         </div>
Chemistry 11		<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <span style="font-size: 2em;">→</span> </div>           CHEM 0500         </div>
CHEMISTRY		
IF YOU TOOK	YOUR GRADE	CHOOSE
Chemistry 11 <b>AND</b> Pre-Calculus 12	67% or higher (recommended)	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <span style="font-size: 2em;">→</span> </div>           CHEM 1500 <b>AND</b> 1510         </div>
Chemistry 12 <b>AND</b> Pre-Calculus 12	73% or higher (recommended)	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <span style="font-size: 2em;">→</span> </div>           CHEM 1500 <b>AND</b> 1520         </div>
IF YOU NEED		
Chemistry 11		<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <span style="font-size: 2em;">→</span> </div>           CHEM 0500         </div>
Chemistry 12		<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <span style="font-size: 2em;">→</span> </div>           CHEM 0600         </div>
Pre-Calculus 12		<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <span style="font-size: 2em;">→</span> </div>           SEE MATH SECTION BELOW         </div>
PHYSICS		
IF YOU TOOK	YOUR GRADE	CHOOSE
Physics 11 <b>AND</b> Pre-Calculus 12	67% or higher	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <span style="font-size: 2em;">→</span> </div>           PHYS 1100 <b>AND</b> 1200         </div>
Physics 12 <b>AND</b> Pre-Calculus 12	67% or higher	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <span style="font-size: 2em;">→</span> </div>           PHYS 1150 <b>AND</b> 1250         </div>
Physics 11	Below 67%	<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <span style="font-size: 2em;">→</span> </div>           PHYS 0500         </div>
IF YOU NEED		
Physics 11		<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <span style="font-size: 2em;">→</span> </div>           PHYS 0500         </div>
Physics 12		<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <span style="font-size: 2em;">→</span> </div>           PHYS 0600         </div>
Pre-Calculus 12		<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <span style="font-size: 2em;">→</span> </div>           SEE MATH SECTION BELOW         </div>

## MATH – EVERY SCIENCE MAJOR REQUIRES 6 CREDITS OF FIRST-YEAR CALCULUS

IF YOU TOOK	YOUR GRADE		CHOOSE
Pre-Calculus 12	67% or higher (within the last 2 years)	➡	One of the following streams: MATH 1140 AND 1240 MATH 1150 AND 1250
Pre-Calculus 12	Below 67% (within the last 2 years)	➡	MATH 1000 <b>or</b> 0630 <b>or</b> 0600 + 0610
Foundations 12	All grades	➡	MATH 0510 + MATH 0600 + MATH 0610

MATH 1140/1240 is recommended for all Science Majors  
MATH 1150/1250 is recommended for all Biology Majors

**PLEASE NOTE:** For all high school courses with no required grade listed, 67% or higher is highly recommended.

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 – 1000/2000 level

**Note:** Many science and math courses are offered in Fall **or** Winter semester only.

FALL SEMESTER ONLY	WINTER SEMESTER ONLY
CHEM 1500	CHEM 1510 <b>or</b> 1520
CHEM 2100	CHEM 2220
CHEM 2160	CHEM 2250
CHEM 2120	CMNS 2300
PHYS 1150	PHYS 1250
BIOL 1210	BIOL 1110
BIOL 2160	BIOL 2130
	BIOL 2340

# 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		_____			
_____	Upper-level elective		_____	CHEM BIOL elective		_____	_____	
_____	Upper-level elective		_____	CHEM BIOL elective		_____	_____	
<b>Electives:</b>  <b>Institutional Learning Outcomes (ILOs) may be required to graduate.</b> Refer to the <a href="#">Degree Works website</a> for more information.		CHEM BIOL elective		_____	_____	<b>Honours Program Courses</b>		
		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

This form is meant to be used as a guideline in conjunction with the [TRU Academic Calendar](#) and [Course Schedule](#). Please see these resources for more about course prerequisites and co-requisites

### 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](http://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		