

Bachelor of Science (CELLULAR, MOLECULAR AND MICROBIAL 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
ENGLISH	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)
MATH	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)
BIOLOGY	BIOL 1210 AND BIOL 1110	Life Sciences 11 or Anatomy & Physiology 12 AND Chemistry 11 all with 67% or higher	If you need: Life Sciences 11 OR Anatomy & Physiology 12 →	BIOL 0500 or BIOL 0600 (1 course required, not both)
			If you need: Chemistry 11 →	CHEM 0500
CHEMISTRY	CHEM 1500 AND CHEM 1510	Pre-Calculus 12 AND 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 AND Chemistry 12 both with 73% or higher	If you need: Chemistry 11 → (Chemistry 12 not required)	CHEM 0500
PHYSICS	PHYS 1100 AND PHYS 1200	Pre-Calculus 12 AND 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 AND 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 or 1110	ENGL 1100 or 1110 or 1120 or 1140 or *1150 or 1210 (see note #2 next page: CMNS 2290 or 2300 or non-Science elective)
BIOL 1210	BIOL 1110
CHEM 1500	CHEM 1510 or 1520
MATH 1150 (preferred) or 1140	MATH 1250 (preferred) or 1240
PHYS 1100 or 1150	PHYS 1200 or 1250 (see note #3 next page)

YEAR 2

FALL SEMESTER	WINTER SEMESTER
CHEM 2120	CHEM 2220
BIOL 2160 (important)	BIOL 2130
BIOL 2170	BIOL 2340
BIOL 2280	BIOL 2290
Non-Science Elective	COMP (3 credits) (see note #5 next page)

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

Bachelor of Science CELLULAR, MOLECULAR & MICROBIAL BIOLOGY (CMMB) MAJOR Checklist (120 credits)

1000-Level CORE courses (33 credits)			2000-Level CORE courses (24 credits)			3000/4000-Level (42 credits)					
COURSE	GRADE		COURSE	GRADE		COURSE	GRADE				
ENGL 1100 or 1110 ^{1,2}	_____	_____	BIOL 2130 - Cell Biology	_____	_____	BIOL 3000 - Biometrics	_____	_____			
ENGL 1100, 1110, 1120, 1140, 1210 or CRWR 1150/ENGL 1150 ^{1,2}	_____	_____	BIOL 2340 - Introduction to Genetics	_____	_____	BIOL 3130 - Introduction to Biochemistry	_____	_____			
			BIOL 2160 - Introductory Microbiology	_____	_____	BIOL 3230 - Biochemistry	_____	_____			
BIOL 1110 - Principles of Biology 1	_____	_____	BIOL 2170 - Introduction to Ecology	_____	_____	BIOL 3350 - Molecular Genetics	_____	_____			
BIOL 1210 - Principles of Biology 2	_____	_____	BIOL 2280 - Evolution & Ecology of Land Plants	_____	_____	BIOL 3520 - Cell Physiology	_____	_____			
CHEM 1500 - Chemical Bonding/Organic Chem.	_____	_____	BIOL 2290 - Evolution of Animal Body Plans	_____	_____	BIOL 3210 - Microbial Ecology	_____	_____			
CHEM 1510 or 1520	_____	_____	CHEM 2120 - Organic Chemistry 1	_____	_____	BIOL 3400 - Reading and Writing Great	_____	_____			
MATH 1140 (or 1150) -Calculus 1	_____	_____	CHEM 2220 - Organic Chemistry 2	_____	_____	BIOL 4110 - Advanced Microbiology Lab	_____	_____			
MATH 1240 (or 1250) -Calculus 2	_____	_____	ELECTIVES (21 credits)			BIOL 4210 - Microbial Physiology	_____	_____			
PHYS 1100 or 1150 ³	_____	_____	Non-science elective ⁴	_____	_____	BIOL 4130 - Molecular Evolution	_____	_____			
PHYS 1200 or 1250 ³	_____	_____	Non-science elective ⁴	_____	_____	BIOL 4250 - Biochemical Techniques 2	_____	_____			
COMP 3 credits ¹	_____	_____	Non-science elective ⁴	_____	_____	BIOL 4350 - Regulation of Gene Expression	_____	_____			
Notes: 1. Must be taken prior to third year. 2. Students with a B or better in ENGL 1100 or 1110 need only take 3 credits of ENGL. The remaining 3 credits may be taken in any discipline outside science. CMNS 2300 is recommended. (*English 1150 may not be suitable for professional programs. Please consult your Advisor.) 3. Students with a grade of 80% or better in Physics 12 only need to complete PHYS 1150 (3 credits). The remaining 3 credits may be taken in any subject area. 4. Non-Science electives must be in at least two different subject areas (other than English). 5. The 3 credits of COMP may be COMP 1020/1030/and one other 1-credit COMP OR COMP 1110 OR COMP 1130.			Elective in lieu of 2 nd ENGL ²	_____	_____	CMMB Electives - Choose 2 from (6 credits):					
			General elective (1000-4000 level)	_____	_____	BIOL 3010, BIOL 3200, BIOL 3310, BIOL 3510, BIOL 3540, BIOL 3550, BIOL 3800, BIOL 4150, BIOL 4480, BIOL 4490, BIOL 4600					
			3000/4000 elective	_____	_____	3000/4000 elective	_____	_____	CMMB elective	_____	_____
			3000/4000 elective	_____	_____	3000/4000 elective	_____	_____	CMMB elective	_____	_____
			Electives: Institutional Learning Outcomes (ILOs) may be required to graduate. Refer to the Degree Works website for more information. CMMB Honours Program: Requires completion of 126 credits: 117 credits as above (minus 3 credits of upper-level electives) plus BIOL 3980 and BIOL 4980 (3 credits) and BIOL 4990 (Honours Thesis; 6 credits).			Honours Courses (optional)					
						BIOL 3980 – Intro to Research			_____	_____	
*NEW Institutional Learning Outcomes (ILO) Requirements – your Degree Works Program Plan is available through myTRU			BIOL 4980 – Honours Seminar			_____	_____				
			BIOL 4990 – Honours Thesis			_____	_____				

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.

Course Load: Transitioning to university can be challenging and many students choose to take a lighter course load. Please speak with Academic Advising to discuss sequencing, workload, future career and educational goals and more.

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

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			