

## Bachelor of Science (CHEMISTRY 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 |
| CHEM 1500                                | CHEM 1520 (preferred) <b>or</b> 1510                                  |
| MATH 1140 <b>or</b> 1150                 | MATH 1240 <b>or</b> 1250  |
| COMP (3 credits) (see note #4 next page) | BIOL 1110   |
| PHYS 1100 <b>or</b> 1150                 | PHYS 1200 <b>or</b> 1250  |

## YEAR 2

| FALL SEMESTER        | WINTER SEMESTER          |
|----------------------|--------------------------|
| CHEM 2120            | CHEM 2220                |
| CHEM 2160            | CHEM 2250                |
| CHEM 2100            | CMNS 2300 <b>or</b> 2290 |
| MATH 2110            | MATH 2120                |
| Non-Science Elective | Non-Science Elective     |

## 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 CHEMISTRY MAJOR Checklist (120 credits)

| 1000-Level CORE courses (27-30 credits)   |       |   | 2000-Level CORE courses (24 credits)          |       |              | 3000/4000-Level (39 credits)  |  |       |
|---|-------|---|---|-------|--------------|---|--|-------|
| COURSE  |       | GRADE   | COURSE  |       | GRADE        | COURSE  |  | GRADE |
| ENGL 1100 or 1110 <sup>1,2</sup>  | _____ | _____   | CHEM 2120 - Organic Chemistry 1               |       | _____        | CHEM 3060 - Physical Chemistry 1  |  | _____ |
| ENGL 1100, 1110, 1140 or 1210 <sup>1,2</sup>  | _____ | _____   | CHEM 2220 - Organic Chemistry 2               |       | _____        | CHEM 3070 - Physical Chemistry 2  |  | _____ |
|   |       |   | CHEM 2100 - Introductory Analytical Chemistry |       | _____        | CHEM 3080 - Physical Chemistry Lab (1 credit)   |  | _____ |
| CHEM 1500 - Chemical Bonding/Organic Chem   |       | _____   | CHEM 2160 - Structure, Bonding & Spectroscopy |       | _____        | CHEM 3100 <sup>5</sup> - Instrumental Analysis  |  | _____ |
| CHEM 1510 or 1520   |       | _____   | CHEM 2250 - Fundamentals of Physical Chem     |       | _____        | CHEM 3120 <sup>5</sup> - Instrumental Analysis Lab (1 credit)   |  | _____ |
| BIOL 1110 <sup>1</sup> - Principles of Biology 1  |       | _____   | MATH 2110 - Calculus 3                        |       | _____        | CHEM 3140 - Applied Analytical Chemistry  |  | _____ |
| MATH 1140 (or 1150) - Calculus 1  |       | _____   | MATH 2120 - Linear Algebra                    |       | _____        | CHEM 3220 - Advanced Organic Chemistry  |  | _____ |
| MATH 1240 (or 1250) - Calculus 2  |       | _____   | CMNS 2290 or 2300 <sup>1,2</sup>              |       | _____        | CHEM 3230 - Organic Spectroscopy  |  | _____ |
| PHYS 1100 or 1150   |       | _____   | <b>ELECTIVES (27-30 credits)</b>              |       |              | CHEM 3240 - Organic Chemistry Lab (1 credit)  |  | _____ |
| PHYS 1200 or 1250   |       | _____   | <b>COURSE</b>                                 |       | <b>GRADE</b> | CHEM 3310 - Inorganic Chemistry 1   |  | _____ |
| COMP 3 credits <sup>1,4</sup>   |       | _____   | Non-science elective <sup>3</sup>             |       | _____        | CHEM 3320 - Inorganic Chemistry 2   |  | _____ |
| <b>Notes:</b><br>1. Must be taken prior to third-year.<br>2. Students with a grade of B or better in ENGL 1100 (or 1110) may proceed to either of the required CMNS 2290 or 2300 in their second year. Students with less than a B grade in their first year English course are required to take another 3 credits of first year English (1110, ENGL 1140, or 1210) before their second year English requirement.<br>3. Non-Science electives must be in at least two different subject areas (other than English).<br>4. The 3 credits of COMP: suggest: 3 of COMP 1020, 1030, 1050, 1070, 1080, 1150 OR COMP 1110 OR COMP 1130.<br>5. These 3000 level courses must be taken in the fall semester of third year.<br>6. CHEM 4600 is offered in winter semester of alternate "odd" years.<br>7. CHEM 4220 and CHEM 4320 are offered in winter semester of "even" years.<br>8. CHEM 3730 is equivalent to BIOL 3130. CHEM 3730 is required. |       | Non-science elective <sup>3</sup>                     |   | _____ | _____        | CHEM 3330 - Inorganic Chemistry Lab (1 credit)  |  | _____ |
|   |       | Non-science elective <sup>3</sup>                     |   | _____ | _____        | CHEM 3730 <sup>8</sup> - Introduction to Biochemistry   |  | _____ |
|   |       | Elective in lieu of 2 <sup>nd</sup> ENGL <sup>2</sup> |   | _____ | _____        | CHEM 4400 - Advanced Analytical Lab (1 credit)  |  | _____ |
|   |       | General elective (1000-4000 level)                    |   | _____ | _____        | 1 of CHEM 4070, 4090, 4220 <sup>7</sup> , 4320 <sup>7</sup> or 4600                                       |  | _____ |
|   |       | General elective (1000-4000 level)                    |   | _____ | _____        |   |  |       |
|   |       | General elective (1000-4000 level)                    |   | _____ | _____        | 1 of CHEM 4410L, 4420L or 4430L   |  | _____ |
|   |       | 3000/4000 level elective                              |   | _____ | _____        |   |  |       |
|   |       | 3000/4000 level elective                              |   | _____ | _____        | 1 of CHEM 3010, 3020, 3030, 4070, 4090, 4220 <sup>7</sup> , 4320 <sup>7</sup> , 4480 or 4600 <sup>6</sup> |  | _____ |
| 3000/4000 level elective  |       | _____   | _____   |       |              |   |  |       |
| <b>*NEW</b> Institutional Learning Outcomes (ILO) Requirements – <a href="#">Degree Works Program Plan</a> is available in <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)<br>non-Activity | 1000, 1230, 2110,<br>2130, 2140, 2210 |
| French (FRAN)                       | All   | Political Studies (POLI)                  | All                                   |
| Film (FILM)                         | All   | Psychology (PSYC)                         | All                                   |
| Finance (FNCE)                      | 2120  | Service & Community Learning<br>(SRCL)    | 1000                                  |
| First Nation Language (FNLG)        | All   | Sociology (SOCL)                          | All                                   |
| Geography (GEOG) (non-physical)     | 1010, 1100, 1110,<br>2110, 2120, 2220,<br>2230 (excluded: GEOG<br>1000, 2020) | Spanish (SPAN)                            | All                                   |
| German (GERM)                       | All   | Speech (SPEE)                             | 1500, 2500                            |
| History (HIST)                      | All 1000 level & 2000<br>level  | Student Success (STSS)                    | 1010, 1020                            |
| Human Resource Management<br>(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  |   |                                       |