

<p>FIRST YEAR</p> <p>COMMUNICATION REQUIREMENT¹ 3</p> <p>BIOL 112, 121, 140² 8</p> <p>CHEM 121 (111), 123 8</p> <p>MATH 100 OR 102 OR 104³ 3</p> <p>MATH 101 OR 103 OR 105⁴ 3</p> <p>PHYS 101⁵ 3</p> <p>ELECTIVES⁶ 5</p> <p>TOTAL CREDITS 33</p>	<p>THIRD YEAR</p> <p>BIOL 230 (OR 260), 300¹¹, 336¹² 9</p> <p>TWO OF BIOL 337, 340, 341, 351, 352¹³ 4</p> <p>CHEM 300¹, 313 6</p> <p>CHEM 315, 335¹⁴ 2</p> <p>CHEM 319, 329 2</p> <p>ONE OF CHEM 218, 305, 311, 327, 330 3</p> <p>ELECTIVES⁶ 7</p> <p>TOTAL CREDITS 33</p>
<p>SECOND YEAR</p> <p>BIOL 200, 201⁷, 234 9</p> <p>ONE OF BIOL 203, 204, 205, 209, 210 4</p> <p>CHEM 203⁸, 213, 245 8</p> <p>CHEM 205⁹, 208¹⁰, 211 10</p> <p>ELECTIVES⁶ 2</p> <p>TOTAL CREDITS 33</p>	<p>FOURTH YEAR</p> <p>BIOL 449 OR CHEM 449 6</p> <p>CHEM AND LIFE SCIENCE ELECTIVES¹⁵ 18</p> <p>ELECTIVES⁶ 9</p> <p>TOTAL CREDITS 33</p> <p>TOTAL CREDITS FOR DEGREE 132</p>

¹ Of the 6 credits of coursework is required to satisfy the Communication Requirement, 3 credits are specified in third year (CHEM 300). The remaining 3 credits must be chosen from the list of acceptable courses, see [Communication Requirement](#). ENGL credits beyond those needed to satisfy the Communication Requirement may be applied towards the Faculty of Science [Arts Requirement](#).

² Students without Biology 11 or Biology 12 must take either BIOL 111 before taking BIOL 112, 121 or 140.

³ MATH 180 or 184 or 120 may substitute for any of the specified differential calculus courses listed by decreasing the electives by 1 credit. MATH 110 may substitute for any of the specified differential calculus courses listed by decreasing the electives by 3 credits.

⁴ MATH 121 may substitute for any of the specified integral calculus courses listed by decreasing the electives by 1 credit.

⁵ PHYS 107 or 117 may substitute for PHYS 101. Students without Physics 12 must take PHYS 100 before taking other 100-level PHYS courses.

⁶ Electives must be chosen to ensure the Faculty of Science [Arts Requirement](#) and [Upper-level Requirement](#) are met. Elective credits may be redistributed among the years in this specialization, provided the total number remains the same. The year level of an elective does not need to correspond to the year level of the specialization. Note that students in honours specializations must complete a minimum of 30 credits in each Winter Session.

⁷ BIOC 202 or 203 are suitable substitutes for this requirement.

⁸ Students with CHEM 235 and a score of 76% or higher in CHEM 233 may apply for admission to this specialization and will be allowed to use CHEM 233 and 235 in place of CHEM 203.

⁹ CHEM 304 is an acceptable substitute for this requirement.

¹⁰ May be deferred to third year to allow space for additional electives.

¹¹ STAT 200 may replace BIOL 300 with permission of a Biology specialization advisor. Students who replace BIOL 300 must complete an additional 3 credits of BIOL numbered higher than 300.

¹² May be deferred to fourth year to allow space for additional electives.

¹³ BIOL 341 is recommended. BIOL 326, 363, 404, 409, 437, and 444 may also be included in this list of courses. If the credit total of the courses selected for this requirement exceeds 4, the excess may be applied towards BIOL lecture electives (see footnote 15).

¹⁴ CHEM 325 and 345 may be substituted for CHEM 315 and 335 and 2 credits of CHEM 300-level lecture electives.

¹⁵ Chosen from 300- and 400- level BIOC, BIOL, CAPS, CHEM, MICB, MRNE, or PHYL lecture courses, as well as ANAT 390, 391, EOSC 470, 471, 474, 475, 478, GEOB 307, 407, FNH 350, 351, 451, MATH 462, MEDG 410, 419, 420, 421, and PCTH 305. At least 6 credits must be chosen from BIOL lecture courses and at least 6 credits must be chosen from 400-level CHEM lecture courses. Recommended electives include BIOC 302, 303, 402, 410, BIOL 335, 361, 435, 436, 463, CHEM 411, 413, 435 and MICB 325, 405.