# Honors Specialization in Bioinformatics

## 12.0 Module Courses

### Year 1: 5.0 Courses (4.0 Principal Courses)

- **1.0 course:** Biology 1001A and 1002B
- **1.0 course:** Chemistry 1301A/B and 1302A/B
- **0.5 course** from: Computer Science 1025A/B or 1026A/B or Engineering Science 1036A/B
- **0.5 course** from: Computer Science 1027A/B or 1037A/B (in either case with a mark of at least 65%)
- **1.0 course** from: Applied Math 1201A/B or 1413, Calculus 1000A/B, 1301A/B, 1500A/B or 1501A/B, Math 1600A/B
- **1.0 elective course** (Must do 1.0 of Category A or B requirement)

**Points to Consider:**
- Biology, Chemistry, Computer Science, and Math are included in the 4.0 principal courses. Need a 70% average on 4.0 principal courses with no mark less than a 60%.
- Biology 1201A with a mark of at least 70% may be used in place of Biology 1001A, and Biology 1202B with a mark of at least 70% may be used in place of Biology 1002B.
- This module concentrates on the computational aspects of bioinformatics, while at the same time providing students with enough background in the biosciences to appreciate the contexts in which computation is applied. The Honors Specialization in Bioinformatics leads to a degree that is accredited by the Computer Science Accreditation Council, the academic arm of the Canadian Information Processing Society, under its interdisciplinary program criteria.

### Year 2: 5.0 Courses

- **2.5 courses:** Computer Science 2208A/B, 2209A/B, 2210A/B, 2211A/B, 2212A/B/Y
- **1.0 course:** Biochemistry 2280A, Biology 2581B
- **0.5 course:** Chemistry 2213A/B
- **1.0 elective course**

**Points to Consider:**
- Chemistry 2213A/B and 2223B may be replaced in the module by Chemistry 2273A and 2283G.

### Year 3: 5.0 Courses

- **2.0 courses:** Computer Science 3305A/B, 3319A/B, 3331A/B, 3340A/B
- **0.5 additional course** from: Math 2156A/B, Computer Science courses at the 3000 level or above.
- **0.5 course** from: Computer Science 2214A/B or Math 2155F/G
- **0.5 course** from: Biology 2290F/G or Chemistry 2223B
- **0.5 course** from: Biochemistry 3381A, Biology 3592A, 3593B
- **1.0 elective course**

### Year 4: 5.0 Courses

- **1.5 course:** Computer Science 4460Z, 4462A/B, 4463A/B
- **0.5 course** from: Biology 2244A/B, Stats 2141A/B, 2244A/B, 2857A/B, 2657A
- **1.0 course** from: Computer Science 4411A/B, 4412A/B, 4432A/B, 4445A/B
- **0.5 course** from: Biochemistry 4445F or Computer Science 4461A/B
- **0.5 course** from: Computer Science 3307A/B/Y or 3346A/B
- **1.0 elective course**

**Points to Consider:**
- See back page for important information.

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**Notes:**

- You may have taken a former course that isn’t listed, because it isn’t offered anymore, but still meets the requirements of the degree – refer to the online academic calendar for the complete list of substitutions.
- Students should plan this module taking into account prerequisites of senior courses.
- The order of courses listed here is a recommendation only. It is possible to complete this module in a different order than what is listed here.

**Common Course Policy:**

To be considered if you are completing two modules with common courses. You are allowed to double count 1.0 credits toward both modules. Any remaining common courses are distributed between the two modules as evenly as possible and substituted with alternate courses. Please note, when choice exists in a module, courses are not considered common unless and until all choice is exhausted. For more information, see the Academic Counselling website or speak with an Academic Counsellor.
Module and Graduation Planning

<table>
<thead>
<tr>
<th>First Year</th>
<th>5.0 courses numbered 1000-1999, including 1.0 from Category A or B</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>70% in required principal courses. No principal courses less than 60%</td>
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<tr>
<td>Module Courses</td>
<td>9.0 or more courses specified by Department</td>
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<tr>
<td></td>
<td>70% cumulative average in HSP module with no mark below 60%</td>
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<tr>
<td>Essay</td>
<td>2.0 E, F, G courses including 1.0 from 2000 level or above (essay courses must be done at Western)</td>
</tr>
<tr>
<td>Breadth</td>
<td>1.0 Category A (Social Science, Interdisciplinary and Multidisciplinary, Various)</td>
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<tr>
<td></td>
<td>1.0 Category B (Arts &amp; Humanities and Languages)</td>
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<tr>
<td></td>
<td>1.0 Category C (Science)</td>
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<tr>
<td>Courses</td>
<td>No more than 7.0 Year 1 courses, 13.0 minimum senior level</td>
</tr>
<tr>
<td>BSc degree</td>
<td>4 year: 11.0 Science/BMSc courses (14.0 maximum in one subject area)*</td>
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<tr>
<td>Averages</td>
<td>60% cumulative average in any additional Module taken</td>
</tr>
<tr>
<td></td>
<td>65% cumulative average on 20.0 courses successfully completed</td>
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*Subject Areas: Actuarial Science; Astronomy; Biology; Chemistry; Computer Science; Earth Sciences; Environmental Sciences; Physics; Statistical Sciences - are all separate subject areas. Courses in Applied Mathematics, Calculus and Mathematics belong to the same subject area – the subject area of mathematics.