

Honors Specialization in Bioinformatics

12.0 Module Courses

Year 1: 5.0 Courses (4.0 Principal Courses)

- **1.0 course:** Biology 1001A and 1002B, or the former Biology 1222 or 1223
- **1.0 course:** Chemistry 1301A/B and 1302A/B, or the former Chemistry 1100A/B and 1200A/B, or the former Chemistry 1050
- **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, or the former Calculus 1100A/B, 1201A/B, Linear Algebra 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, or the former Stats 2122A/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.

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.

YEAR 1		HONORS SPECIALIZATION (YEARS 2-4)	
1a. Principal	6a. HSP	11a. HSP	16a. HSP
1b. Principal	6b. HSP	11b. HSP	16b. HSP
2a. Principal	7a. HSP	12a. HSP	17a. HSP
2b. Principal	7b. HSP	12b. HSP	17b. HSP
3a. Principal	8a. HSP	13a. HSP	18a. HSP
3b. Principal	8b. HSP	13b. HSP	18b. HSP
4a. elective	9a. HSP	14a. HSP	19a. elective
4b. elective	9b. elective	14b. elective	19b. elective
5a. Cat A or B	10a. elective	15a. elective	20a. elective
5b. Cat A or B	10b. elective	15b. elective	20b. elective
Module and Graduation Planning			
First Year	5.0 courses numbered 1000-1999, including 1.0 from Category A or B		
	70% in required principal courses. No principal courses less than 60%		
Module Courses	9.0 or more courses specified by Department		
	70% cumulative average in HSP module with no mark below 60%		
Essay	2.0 E, F, G courses including 1.0 from 2000 level or above (essay courses must be done at Western)		
Breadth	1.0 Category A (Social Science, Interdisciplinary and Multidisciplinary, Various)		
	1.0 Category B (Arts & Humanities and Languages)		
	1.0 Category C (Science)		
Courses	No more than 7.0 Year 1 courses, 13.0 minimum senior level		
BSc degree	4 year: 11.0 Science/BMSc courses (14.0 maximum in one subject area)*		
Averages	60% cumulative average in any additional Module taken		
	65% cumulative average on 20.0 courses successfully completed		

***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.