Honors Specialization in Data Sciences Module (20.0 courses)

This is a guide only. For complete information, see the <u>online Academic Calendar</u>

Last updated June 8, 2021

Year 1 (5.0 Courses)

Calculus 1000A/B or 1500A/B

Calculus 1501A/B (**recommended)** or Calculus 1301A/B with a mark of 85%[+]

Mathematics 1600A/B

CS1026A/B *or* DS1200A/B (min 65%) *and* Computer Science 1027A/B (min 65%)

0.5 other principal courses

2.0 options

NOTE: At least 1.0 course must be chosen from two of Category A, B, and C as listed in the Academic Calendar(e.g. 1.0 from A and 1.0 from C)

Admission to Honors Specialization Module:

Complete first year (5.0 courses) with no failures including:

- Minimum average of 70% on 3.0 principal courses with no mark less than 60% in any of the 3.0 principal courses:
  - Calculus 1000A/B or Calculus 1500A/B
  - Calculus 1501A/B or Calculus 1301A/B with a mark of at least 85%
  - Mathematics 1600A/B
  - CS1026 A/B *or* DS1200A/B (min 65%) *and* 1027 A/B (min 65%)
  - 0.5 other principal course

Recommended course: <u>DS1000A/B or Statistics 1023A/B</u>
NOTE 1: If not taken in first year, Math 1600A/B must be completed prior to the second term of second year.
NOTE 2: AM1412A/B may be substituted for the 1.0 Calculus course requirements and AM1411A/B may be substituted for Mathematics 1600A/B.
NOTE 3: DS1200A/B may be substituted for CS1026A/B.

MODULE is a joint program with CS: 10.0 courses#

3.5 courses: DS2000A/B, CS 2210A/B, 2211A/B, 2212A/B/Y, SS2857A/B, SS2858A/B, SS2864A/B.
0.5 courses from: CS 2214A/B, Mathematics 2151A/B, 2155F/G.
3.5 courses: DS3000A/B, CS3319A/B, CS3340A/B, SS3843A/B, 3859A/B, 3860A/B, 4850F/G.
0.5 courses from: CS 4490Z or SS 4844 A/B
1.5 courses from: CS 3346A/B, 3377A/B (or Science 3377A/B), CS 4411A/B, 4416A/B, 4417A/B, 4418A/B, 4442A/B,4490Z or SS 4844A/B, SS 4860A/B, 4864A/B, 4960 F/G
0.5 courses from: Any 4000-level course offered by the Department of Computer Science or the Department of Statistical and Actuarial Sciences
NOTE: A minimum of 4.5 modular courses must be competed from each of the Departments of Computer Science, and Statistical and Actuarial Sciences.

 # Module shown is as per current calendar year. You may complete module using current calendar year <u>or</u> using calendar in effect in year of module entry

OPTIONS (5.0) Courses

These may also include any additional module *other than Applied Statistics* [##].

If taking another module that includes an intro stats course (anti-req to SS2858), please consult with other department regarding course substitution.

[##] **Consult CS dept if considering another CS module(CS major also excluded).**

Also, you must complete any additional module with a minimum 60% average.

Notes:

- Courses common to more than one module taken require substitution. However, if both modules are from faculty of science, up to 1.0 courses *explicitly required for each module* can be counted towards both modules.
- **2nd Degree students should meet with** a faculty counsellor to review other degree requirements (e.g. other than modular courses needed)

Progression Requirements

- Minimum cumulative modular average of 70%
- Minimum mark of 60% in each course of module
- Passing grade in each option (elective) course

Graduation Requirements

Breadth Requirement:
- At least 1.0 course from each of Category A, B, and C as listed in the Academic Calendar.

Essay Requirement:
- 2.0 essay courses (1.0 must be senior course).   Note that any modular essay course taken can be used towards this requirement**.**

Senior Courses:
- 13.0 senior courses(numbered 2000-4999) for a 4 yr degree

Average Requirements:
- Minimum overall average of 65% on the 20.0 courses
- Minimum cumulative modular average of 70% and a minimum mark of 60% in each course of the module
- Passing grade in each course
- Minimum cumulative modular average of 60% in any additional Major or Minor module completed

Residency Requirement:
- The majority of your modular courses must be completed at Western. Please check academic calendar for other residency requirements.

<u>Note:</u>

To graduate with an Honors BSc, at least 11.0 of your 20.0 courses must be taken from the Faculty of Science.

Notes for students interested in graduate programs:
If interested in Stats grad programs should take SS3657a & SS3858b

Department Recommendation for order in which <u>modular</u> courses should be taken:

Second Year

DS2000A/B Introduction to Data Science
CS2210A/B Data Structure and Algorithms
CS2211A/B Software Tools and Systems Programming
SS2857A   Probability and Statistics I

CS2212B Intro to Software Engineering **
CS2214B Discrete Structures for Computing (or Math 2151 or 2155)
SS2858B Probability & Statistics II
SS2864B Statistical Programming (now offered both terms)

** can defer to either term of year 3 if course conflict(2019/20) or otherwise

Third Year

CS3319A   Databases 1
SS3843A   Introduction to Study Design
SS3859A   Regression

CS3340B   Analysis of Algorithms 1
DS3000B   Introduction to Machine Learning (now offered both terms)
SS3860A/B Generalized Linear Models

0.5 courses from the 1.5 course selection lists

Fourth Year

SS4844B   Statistical Consulting or CS4490Z
SS4850G   Advanced Data Analysis

1.0 courses from the "1.5 modular course selection list"
[##]
##depends on year 3 course selections (could be more or less)

0.5 courses from the "0.5 modular course selection list" [##]