**Honors Specialization in Data Sciences Module (20.0 courses)**

This is a guide. For complete information, see the online Academic Calendar

Last updated June 8, 2021

<table>
<thead>
<tr>
<th>Year 1 (5.0 Courses)</th>
<th>Graduation Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Courses:</strong></td>
<td><strong>Breadth Requirement:</strong></td>
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<tr>
<td>Calculus 1000A/B or 1500A/B</td>
<td>• At least 1.0 course from each of Category A, B, and C as listed in the Academic Calendar.</td>
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<tr>
<td>Calculus 1501A/B (recommended) or Calculus 1301A/B with a mark of 85%*</td>
<td><strong>Essay Requirement:</strong></td>
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<td>Mathematics 1600A/B</td>
<td>• 2.0 essay courses (1.0 must be senior course). Note that any modular essay course taken can be used towards this requirement.</td>
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<tr>
<td>CS1026A/B or DS1200A/B (min 65%) and Computer Science 1027A/B (min 65%)</td>
<td><strong>Senior Courses:</strong></td>
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<td>0.5 other principal courses</td>
<td>• 13.0 senior courses (numbered 2000-4999) for a 4 yr degree</td>
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<td><strong>NOTE:</strong> At least 1 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)</td>
<td><strong>Average Requirements:</strong></td>
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**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 1027A/B (min 65%)
  - 0.5 other principal course

**Recommended course:** DS1000A/B or Statistics 1023A/B

**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 DS1026A/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, SS3859A/B, 3860A/B, 4850F/G.
- **0.5 courses from:** CS 4490Z or SS 4844 Z/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, 3864A/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 completed from each of the Departments of Computer Science, and Statistical and Actuarial Sciences.

**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

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**Department Recommendation for order in which modular 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)

**Notes:**
- **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 I
- 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 CS490Z
- SS4850G Advanced Data Analysis

- **1.0 courses from the "1.5 modular course selection list"**

**Notes for students interested in graduate programs:**

- If interested in Stats grad programs should take SS3657a & SS3858b

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**Graduation 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.

**Note:**

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