# Honors Specialization in Data Sciences Module (20.0 courses)

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

Last updated June 21, 2019

<table>
<thead>
<tr>
<th>Year 1 (5.0 Courses)</th>
<th>Graduation Requirements</th>
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<tr>
<td><strong>Calculus 1000A/B or 1500A/B</strong></td>
<td><strong>Breadth Requirement:</strong></td>
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<tr>
<td><strong>Calculus 1501A/B (recommended) or Calculus 1301A/B with a mark of 85%</strong></td>
<td><strong>At least 1.0 course from each of Category A, B, and C as listed in the Academic Calendar.</strong></td>
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<tr>
<td><strong>Mathematics 1600A/B</strong></td>
<td><strong>Essay Requirement:</strong></td>
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<tr>
<td><strong>Computer Science 1026 A/B and Computer Science 1027A/B (min 65%)</strong></td>
<td><strong>2.0 essay courses (1.0 must be senior course). Note that any modular essay course taken can be used towards this requirement.</strong></td>
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<tr>
<td><strong>0.5 other principal courses</strong></td>
<td><strong>Senior Courses:</strong></td>
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<td><strong>2.0 options</strong></td>
<td><strong>13.0 senior courses(numbered 2000-4999) for a 4 yr degree</strong></td>
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**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
  - Computer Science 1026 A/B (min 65%) and 1027 A/B (min 65%)
  - 0.5 other principal course

Recommended (but not required) first year course: 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:** AM1413 may be substituted for the 1.0 Calculus course requirements and AM1411 A/B may be substituted for Mathematics 1600 A/B.

### MODULE is a joint program with CS: 10.0 courses

- **3.0 courses:** Computer Science 2210A/B, 2211A/B, 2212A/B, 3319A/B, 3340A/B, 4414A/B.
- **0.5 courses from:** Computer Science 2214A/B, Mathematics 2151A/B, 2155F/G
- **4.0 courses:** Statistical Sciences 2857A/B, 2858A/B, 2864A/B, 3843A/B, 3850F/G, 3859A/B, 3860A/B, 4850F/G.
- **0.5 courses from:** Computer Science 44902 or Statistical Sciences 4844 A/B
- **1.5 courses from:** Computer Sciences 3346A/B, 3377A/B (or Science 3377A/B), Computer Science 4411A/B, 4412A/B, 4416A/B, 4417A/B, 4418A/B, 4442A/B, 44902 or Statistical Sciences 4844A/B, Statistical Sciences 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 or using calendar in effect 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

### Department Recommendation for order in which modular courses should be taken:

#### Second Year

| 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 I |
- **SS3843A** | Introduction to Study Design |
- **SS3859A** | Regression |
- **CS3340B** | Analysis of Algorithms I |
- **SS3850G** | Statistical Learning |
- **SS3860A/B** | Generalized Linear Models |

0.5 courses from the 1.5 course selection lists

#### Fourth Year

| CS4414A | Introduction to Data Science 1 |
| SS4844B | Statistical Consulting or CS4490Z Thesis |
| SS4850G | Advanced Data Analysis |

1.0 courses from the “1.5 modular course selection list” **

0.5 courses from the “0.5 modular course selection list” **

** depends on year 3 course selections(could be more or less)