Major in Data Sciences Module (15.0 or 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 at least 85%

Mathematics 1600A/B

Computer Science 1026A/B *and* Computer Science 1027A/B

0.5 other principal course

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

- Minimum grade of 60% in each of:
  - 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 courses: DS 1000A/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 and AM1414A/B may be substituted for the 1.0 Calculus course requirements and AM1411A/B may be substituted for Mathematics 1600A/B.

MODULE is a joint program with CS: 7.0 courses

3.5 courses: DS2000A/B, CS2210A/B, 2211A/B, 2212A/B/Y, SS2857A/B, 2858A/B, 2864A/B,
0.5 courses from: Computer Science 2214A/B, Mathematics 2151A/B, 2155F/G
3.0 courses: DS3000A/B, SS3843A/B, 3859A/B, 3860 A/B, CS3319A/B, 3340A/B.

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

OPTIONS (8.0) Courses for a 4 year Degree @@

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 Computer Science (CS) department if considering a CS module..

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

Notes:

@@ **A 3 year degree(DS major only) requires only 3 optional courses.**

Courses common to more than one module taken require substitution.

However, if both modules are from faculty of science, a maximum of 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

- Satisfy the progression requirements for the University (Level 1 and Level II as described in the Academic Calendar)
- See graduation requirements for honors degree (with double major)
- **Note:** some modular course pre-requisites stipulate min. grade of 60%

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)

Average Requirements-for a general degree **:
- Minimum cumulative overall average of 60%
- Minimum cumulative modular average of 60% in the major 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.

Notes:

- **** honors degree(with double major) requires a 70% average within each module**, **with no Ds in any modular course**

- **To graduate with either a 4 year general or honors BSc degree,** at least 11.0 of your 20.0 courses must be taken from the Faculty of Science

- **To graduate with a 3 year BSc degree,** at least 8.0 of your 15.0 courses must be taken from the Faculty of Science.

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
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

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

Fourth Year

Any modular courses not yet completed