STATISTICS AND COMPUTER SCIENCE HONOURS (B.SC.) (79 CREDITS)

Offered by: Mathematics and Statistics (Faculty of Science)
Degree: Bachelor of Science
Program credit weight: 79

Program Description

The program provides a rigorous training in the area of Computer Science and Statistics at the honours level. Exploration of the interactions between the two fields.

Students may complete this program with a minimum of 76 credits or a maximum of 79 credits depending on whether or not they are exempt from taking COMP 202 Foundations of Programming..

Degree Requirements — B.Sc.

This program is offered as part of a Bachelor of Science (B.Sc.) degree.

To graduate, students must satisfy both their program requirements and their degree requirements.

- The program requirements (i.e., the specific courses that make up this program) are listed under the Course Tab (above).
- The degree requirements—including the mandatory Foundation program, appropriate degree structure, and any additional components—are outlined on the Degree Requirements page.

Students are responsible for ensuring that this program fits within the overall structure of their degree and that all degree requirements are met. Consult the Degree Planning Guide on the SOUSA website for additional guidance.

Note: For information about Fall 2025 and Winter 2026 course offerings, please check back on May 8, 2025. Until then, the "Terms offered" field will appear blank for most courses while the class schedule is being finalized.

Program Prerequisites

Students entering the Joint Honours in Statistics and Computer Science are normally expected to have completed the courses below or their equivalents. Otherwise, they will be required to make up any deficiencies in these courses over and above the 76-79 credits of courses in the program.

Expand allContract all

Course	Title	Credits
MATH 133	Linear Algebra and Geometry.	3
MATH 140	Calculus 1.	3
MATH 141	Calculus 2.	4

Required Courses (43 credits)

Expand allContract all

Course	Title	Credits
COMP 202	Foundations of Programming.[1]	3
COMP 206	Introduction to Software Systems.	3
COMP 250	Introduction to Computer Science.	3
COMP 252	Honours Algorithms and Data Structures.	3
COMP 273	Introduction to Computer Systems.	3
COMP 302	Programming Languages and Paradigms.	3
COMP 330	Theory of Computation.	3
COMP 362	Honours Algorithm Design.	3
MATH 247	Honours Applied Linear Algebra.[2]	3
MATH 248	Honours Vector Calculus.	3
MATH 251	Honours Algebra 2.[2]	3
MATH 255	Honours Analysis 2.	3
MATH 356	Honours Probability.	3
MATH 357	Honours Statistics.	3
MATH 533	Regression and Analysis of Variance.	4

[1] Students who have sufficient knowledge in a programming language are not required to take COMP 202 Foundations of Programming..

[2] Students take either MATH 251 Honours Algebra 2. or MATH 247 Honours Applied Linear Algebra., but not both.

Complementary Courses (36 credits)

3 credits selected from:

Expand allContract all

Course	Title	Credits
MATH 242	Analysis 1.	3
MATH 254	Honours Analysis 1.[1]	3

[1] It is strongly recommended that students take both MATH 245 Honours Algebra 1. and MATH 254 Honours Analysis 1..

3 credits selected from:

Expand allContract all

Course	Title	Credits
MATH 235	Algebra 1.	3
MATH 245	Honours Algebra 1.[1]	3

[1] It is strongly recommended that students take both MATH 245 Honours Algebra 1. and MATH 254 Honours Analysis 1..

3 credits selected from:

Expand allContract all

Course	Title	Credits
MATH 387	Honours Numerical Analysis.	3
MATH 397	Honours Matrix Numerical Analysis.	3

8-12 credits selected from:

Expand allContract all

Course	Title	Credits
MATH 523	Generalized Linear Models.	4
MATH 524	Nonparametric Statistics.	4
MATH 525	Sampling Theory and Applications.	4
MATH 527D1	Statistical Data Science Practicum.	3
MATH 527D2	Statistical Data Science Practicum.	3
MATH 556	Mathematical Statistics 1.	4
MATH 557	Mathematical Statistics 2.	4
MATH 558	Design of Experiments.	4
MATH 559	Bayesian Theory and Methods.	4

0-4 credits selected from:

Expand allContract all

Course	Title	Credits
MATH 350	Honours Discrete Mathematics .	3
MATH 352	Problem Seminar.	1
MATH 454	Honours Analysis 3.	3
MATH 462	Machine Learning .	3
MATH 545	Introduction to Time Series Analysis.	4
MATH 563	Honours Convex Optimization .	4
MATH 578	Numerical Analysis 1.[1]	4
MATH 587	Advanced Probability Theory 1.	4
MATH 594	Topics in Mathematics and Statistics .	4

[1] MATH 578 Numerical Analysis 1. and COMP 540 Matrix Computations. cannot both be taken for program credit.

6-15 credits selected from:

Expand allContract all

Course	Title	Credits
COMP 424	Artificial Intelligence.	3
COMP 462	Computational Biology Methods.	3
COMP 540	Matrix Computations.[1]	4
COMP 547	Cryptography and Data Security.	4
COMP 551	Applied Machine Learning.	4
COMP 552	Combinatorial Optimization.	4
COMP 564	Advanced Computational Biology Methods and Research.	0-3
COMP 566	Discrete Optimization 1.	3
COMP 567	Discrete Optimization 2.	3

[1] MATH 578 Numerical Analysis 1. and COMP 540 Matrix Computations. cannot both be taken for program credit.

0-9 credits selected from Computer Science courses selected from COMP courses at the 300 level or above excluding COMP 396 Undergraduate Research Project..