

# MATHEMATICS AND COMPUTER SCIENCE HONOURS (B.SC.) (78 CREDITS)

**Offered by:** Mathematics and Statistics (Faculty of Science)

**Degree:** Bachelor of Science

**Program credit weight:** 78

## Program Description

The B.Sc.; Honours in Mathematics and Computer Science provides a rigorous training, at the honours level, in mathematics and computer science, while exploring the interaction between the two fields. This program may be completed with a minimum of 72 credits or a maximum of 78 credits.

### 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 must consult an Honours adviser in both departments to ensure that they have sufficient background to enter the program. The minimum requirements are the following courses or their equivalencies:

Expand allContract all

Course	Title	Credits
MATH 133	Linear Algebra and Geometry.	3
MATH 150	Calculus A.	4
MATH 151	Calculus B.	4

In particular, MATH 150 Calculus A./MATH 151 Calculus B. and MATH 140 Calculus 1./MATH 141 Calculus 2./MATH 222 Calculus 3. are considered equivalent.

To be awarded the Honours degree, the student must have, at time of graduation, a CGPA of at least 3.00 in the required and complementary

Mathematics courses of the program, as well as an overall CGPA of at least 3.00.

## Required Courses (33-36 credits)

Expand allContract all

Course	Title	Credits
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 310	Operating Systems.	3
COMP 330	Theory of Computation.	3
COMP 362	Honours Algorithm Design.	3
MATH 222	Calculus 3.	3
MATH 251	Honours Algebra 2.	3
MATH 255	Honours Analysis 2.	3
MATH 350	Honours Discrete Mathematics .	3

<sup>1</sup> Students who have successfully completed MATH 150 Calculus A./MATH 151 Calculus B. or an equivalent of MATH 222 Calculus 3. on entering the program are not required to take MATH 222 Calculus 3..

## Complementary Courses (39-42 credits)

0-3 credits selected from:

Expand allContract all

Course	Title	Credits
COMP 202	Foundations of Programming.	3
COMP 204	Computer Programming for Life Sciences.	3
COMP 208	Computer Programming for Physical Sciences and Engineering .	3

<sup>1</sup> Students who have sufficient knowledge of computer programming are not required to take COMP 202 Foundations of Programming./COMP 204 Computer Programming for Life Sciences./COMP 208 Computer Programming for Physical Sciences and Engineering ..

3 credits selected from:

Expand allContract all

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

<sup>1</sup> 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. <sup>1</sup>	3

<sup>1</sup> 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 248	Honours Vector Calculus.	3
MATH 358	Honours Advanced Calculus.	3

9-18 credits selected from:

Expand allContract all

Course	Title	Credits
MATH 356	Honours Probability.	3
MATH 357	Honours Statistics.	3
MATH 387	Honours Numerical Analysis.	3
MATH 454	Honours Analysis 3. <sup>1</sup>	3
MATH 455	Honours Analysis 4.	3
MATH 456	Honours Algebra 3.	3
MATH 457	Honours Algebra 4.	3

<sup>1</sup> Not open to students who have taken MATH 354 .

0-9 credits should be selected from honours courses and 500-level courses given by the Department of Mathematics and Statistics.

12 credits in Computer Science, selected from Computer Science courses at the 300 level or above excluding COMP 364 Computer Tools for Life Sciences, and COMP 396 Undergraduate Research Project.. ECSE 508 Multi-Agent Systems. may also be taken.