PHYSICS AND COMPUTER SCIENCE HONOURS (B.SC.) (81 CREDITS)

Offered by: Physics (Faculty of Science)
Degree: Bachelor of Science
Program credit weight: 81

Program Description

This program provides essential background in physics and computer science at a level sufficient to pursue courses at the 400- and 500-level in either discipline. The program is intended to be flexible to allow students to take either more physics or more computer science courses at the advanced level.

Students entering this Honours program should have high standing in mathematics, physics, and computer science.

To graduate with an Honours degree, a student must have, at time of graduation, a CGPA of at least 3.0 in the required and complementary courses of the program, as well as an overall CGPA of at least 3.0

The program may completed in 78 or 81 credits.

Note: COMP 202 Foundations of Programming.—or an equivalent introduction to computer programming course— is a program prerequisite. U0 students may take COMP 202 Foundations of Programming. as a Freshman Science course; new U1 students should take it as an elective in their first semester.

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.

Required Courses (63 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 350	Numerical Computing.	3
MATH 240	Discrete Structures.	3
MATH 247	Honours Applied Linear Algebra.	3
MATH 248	Honours Vector Calculus.[1]	3
MATH 249	Honours Complex Variables.	3
MATH 314	Advanced Calculus.[1]	3
MATH 325	Honours Ordinary Differential Equations.	3
PHYS 241	Signal Processing.	3
PHYS 251	Honours Classical Mechanics 1.	3
PHYS 253	Thermal Physics.	3
PHYS 257	Experimental Methods 1.	3
PHYS 258	Experimental Methods 2.	3
PHYS 350	Honours Electricity and Magnetism.	3
PHYS 352	Honours Electromagnetic Waves.	3
PHYS 357	Honours Quantum Physics 1.	3
PHYS 362	Statistical Mechanics.	3
PHYS 457	Honours Quantum Physics 2.	3

[1] Note: The student must then take MATH 314 Advanced Calculus. in their second semester instead of MATH 248 Honours Vector Calculus., if scheduling requires it.

Complementary Courses (15 credits)

At least 6 of the 15 complementary credits must come from a course at the 400- or 500-level (excluding COMP 400 Project in Computer Science and PHYS 479 Physics Research Project.), and of these at least 3 must be from a COMP course.

0-3 credits from:

Expand allContract all

Course	Title	Credits
MATH 222	Calculus 3.[1]	3

[1] Note: A student who has not taken MATH 222 Calculus 3. (or equivalent) prior to entering the program must take it in their first semester, increasing the program credits from 78 to 81.

3-4 credits from:

Expand allContract all

Course	Title	Credits
COMP 400	Project in Computer Science	4
PHYS 479	Physics Research Project.	3

6 or 7 credits selected from:

Expand allContract all

Course	Title	Credits
COMP 303	Software Design.	3
COMP 310	Operating Systems.	3
COMP 330	Theory of Computation.	3
COMP 362	Honours Algorithm Design.	3

Any COMP course at the 400- or 500-level (excluding COMP 400 Project in Computer Science) (3 or 4 credits)

3-4 credits from:

Expand allContract all

Course	Title	Credits
MATH 323	Probability.	3
MATH 340	Discrete Mathematics.	3
PHYS 351	Honours Classical Mechanics 2.	3
PHYS 359	Advanced Physics Laboratory 1.	3
PHYS 404	Climate Physics.	3
PHYS 432	Physics of Fluids.	3
PHYS 434	Optics.	3
PHYS 469	Advanced Physics Laboratory 2.	3

Any number of PHYS courses at the 500 level (3 credits each)

Any number of COMP courses at the 400 or 500-level (excluding COMP 400) (3 or 4 credits each)