

COMPUTER SCIENCE - ARTIFICIAL INTELLIGENCE MAJOR (B.SC.) (63 CREDITS)

Offered by: Computer Science (Faculty of Science)

Degree: Bachelor of Science

Program credit weight: 63

Program Description

The B.Sc.; Major in Computer Science: Artificial Intelligence focuses on topics that relate to artificial intelligence and machine learning, including both foundations and applications. Students may complete this program with a minimum of 63 credits or a maximum of 68 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.

Required Courses (39-42 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 251	Algorithms and Data Structures.	3
COMP 273	Introduction to Computer Systems.	3
COMP 302	Programming Languages and Paradigms.	3
COMP 303	Software Design.	3
COMP 424	Artificial Intelligence.	3
MATH 222	Calculus 3.	3
MATH 223	Linear Algebra.	3
MATH 240	Discrete Structures.	3

MATH 323	Probability.	3
MATH 324	Statistics.	3

¹ Students who have sufficient knowledge in a programming language do not need to take COMP 202 Foundations of Programming..

Complementary Courses (24-26 credits)

Group A

6 credits selected from:

Expand allContract all

Course	Title	Credits
COMP 330	Theory of Computation.	3
COMP 350	Numerical Computing.	3
COMP 360	Algorithm Design.	3

Group B

3 credits selected from:

Expand allContract all

Course	Title	Credits
COMP 310	Operating Systems.	3
COMP 421	Database Systems.	3

Group C

3 or 4 credits selected from:

Expand allContract all

Course	Title	Credits
COMP 451	Fundamentals of Machine Learning.	3
COMP 551	Applied Machine Learning.	4

Group D

3 credits selected from:

Expand allContract all

Course	Title	Credits
COMP 345	From Natural Language to Data Science.	3
COMP 370	Introduction to Data Science.	3

Group E

3 or 4 credits selected from:

Expand allContract all

Course	Title	Credits
COMP 417	Introduction Robotics and Intelligent Systems.	3
COMP 445	Computational Linguistics.	3
COMP 511	Network Science.	4
COMP 514	Applied Robotics.	4
COMP 545	Natural Language Understanding with Deep Learning.	4
COMP 549	Brain-Inspired Artificial Intelligence.	3

COMP 550	Natural Language Processing.	3
COMP 558	Fundamentals of Computer Vision.	4
COMP 562	Theory of Machine Learning.	4
COMP 565	Machine Learning in Genomics and Healthcare.	4
COMP 579	Reinforcement Learning.	4
COMP 585	Intelligent Software Systems .	4
ECSE 552	Deep Learning.	4
ECSE 557	Introduction to Ethics of Intelligent Systems.	3

Group F

6 credits of COMP courses at the 300 level or above (except COMP 396 Undergraduate Research Project.).