

COSC 101: Introduction to Computing (3 credits)

This course is designed to provide students with the core competencies of computing literacy and computational thinking, which are essential skills in the digital information age. The course provides an overview of computer systems—hardware, software and networks. Students will practice using essential computing programs and will develop computational solutions to basic problems. The course also covers social and ethical issues related to computing. (*Prerequisite: NA*)

Course Learning Outcomes:

By the end of the course, students will be able to:

- A1. Demonstrate generalized knowledge and understanding of the main computer systems and applications.
- A2. Use basic computing skills for information storage, processing, and communication.
- B1. Design basic computational solutions using algorithms.
- B2. Select and use appropriate computer application to process data for a given problem and guide decision making.
- C1. Use software and hardware with responsibility for the ethical, social and privacy issues related to computing.

Course Learning Materials:

- Technology for Success and Illustrated Series Collection, Microsoft 365 & Office 2021
- MATLAB: A Practical Introduction to Programming and Problem Solving. Butterworth-Heinemann; 6th edition (September 20, 2022)
- Discovering Computers: Digital Technology, Data, and Devices, 17th Edition. Jennifer T. Campbell, Mark Ciampa, Steven M. Freund, Mark Frydenberg, Susan Sebok, Misty E. Vermaat, Barbara Clemens. 2023. Cengage.
- New Perspectives Collection, Microsoft® 365® & Office® 2021 Intermediate, 1st Edition. ISBN-10: 0357672356/ISBN-13: 9780357672358. Cengage.

Course Content:

1. Computer Hardware and Software
2. Computer Applications: Word Processing
3. Computer Applications: Spreadsheets
4. Computer Applications: Presentations
5. Introduction to Algorithms
6. Introduction to Programming
7. Selections (conditional statements)
8. Loops (repetition)
9. Arrays
10. Descriptive Data Analysis
11. Information Technology Security, Ethics, and Privacy

12. Introduction to Artificial Intelligence