ORIGINAL COURSE IMPLEMENTATION DATE:	Fall 2002
REVISED COURSE IMPLEMENTATION DATE:	September 2019
COURSE TO BE REVIEWED (six years after UEC approval):	March 2025

Course outline form version: 05/18/2018

OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

Course Code and Number: COMP 125	**Number of Credits:** 3 Course credit policy (105)

Course Full Title: Principles of Computing

Course Short Title:

(Transcripts only display 30 characters. Departments may recommend a short title if one is needed. If left blank, one will be assigned.)

Faculty: Faculty of Professional Studies	**Department (or program if no department):** Computer Information Systems

Calendar Description:

Provides students with a broad understanding of the fundamental concepts of computing, logic, and data processing. Concepts include introductory hardware and software architecture, models of computation, representation of data, machine arithmetic, assembler programming, command line interfaces, and an introduction to some of the logical and mathematical ideas used in computing.

Note: Competency in computer skills is required. See CIS Required Skills section on the CIS department website for details.

Prerequisites (or NONE):	One of the following: (C or better in one of Pre-calculus 11, Foundations of Mathematics 11, Principles of Mathematics 11, or MATH 085) or (one of Principles of Mathematics 12, Foundations of Mathematics 12, Pre-calculus 12, MATH 092, or MATH 094).
Corequisites (if applicable, or NONE):	NONE
Pre/corequisites (if applicable, or NONE):	NONE

Antirequisite Courses *(Cannot be taken for additional credit.)*

Former course code/number:

Cross-listed with:

Dual-listed with:

Equivalent course(s):

(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)

Typical Structure of Instructional Hours

Lecture/seminar hours	45
Tutorials/workshops	
Supervised laboratory hours	
Experiential (field experience, practicum, internship, etc.)	
Supervised online activities	
Other contact hours:	
Total hours	**45**

Labs to be scheduled independent of lecture hours: ☒ No ☐ Yes

Special Topics *(Double-click on boxes to select.)*

This course is offered with different topics:

☒ No ☐ Yes *(If yes, topic will be recorded when offered.)*

Independent Study

If offered as an Independent Study course, this course may be repeated for further credit: *(If yes, topic will be recorded.)*

☐ No ☐ Yes, repeat(s) ☐ Yes, no limit

Transfer Credit

Transfer credit already exists: *(See **bctransferguide.ca**.)*

☐ No ☒ Yes

Submit outline for (re)articulation:

☒ No ☐ Yes *(If yes, fill in transfer credit form.)*

Grading System

☒ Letter Grades ☐ Credit/No Credit

Maximum enrolment (for information only): 35

Expected Frequency of Course Offerings:

(Every semester, Fall only, annually, etc.)

Department / Program Head or Director: Talia Q	**Date approved:**	December 2028
Faculty Council approval	**Date approved:**	December 7, 2018
Dean/Associate VP: Dr. Tracy Ryder Glass	**Date approved:**	December 7, 2018
Campus-Wide Consultation (CWC)	**Date of posting:**	February 22, 2019
Undergraduate Education Committee (UEC) approval	**Date of meeting:**	March 1, 2019

Learning Outcomes:

Upon successful completion of this course, students will be able to:

- Describe the foundational ideas of computing.
- Explain the basic models of computation.
- Describe hardware and software architecture.
- Create a simple assembler program.
- Use data representation and machine arithmetic.
- Create algorithms to solve problems.
- Describe the basic structure of networks and the internet.
- Use computer logic to create elementary circuits.
- Apply computer logic.
- Use mathematical tools used in computing.

Prior Learning Assessment and Recognition (PLAR)

☒ Yes ☐ No, PLAR cannot be awarded for this course because

Typical Instructional Methods *(Guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion.)*

Lecture

NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.

Typical Text(s) and Resource Materials *(If more space is required, download Supplemental Texts and Resource Materials form.)*

	Author (surname, initials)	Title (article, book, journal, etc.)	Current ed.	Publisher	Year
1.	Schneider, G.M.; Gersting, J.L.	Invitation to Computer Science	☒	Course Technology, Cengage Learning	2018
2.			☐		
3.			☐		
4.			☐		
5.			☐		

Required Additional Supplies and Materials *(Software, hardware, tools, specialized clothing, etc.)*

Typical Evaluation Methods and Weighting

Final exam:	35%	Assignments:	30%	Field experience:	%	Portfolio:	%
Midterm exam:	35%	Project:	%	Practicum:	%	Other:	%
Quizzes/tests:	%	Lab work:	%	Shop work:	%	Total:	100%

Details (if necessary):

Typical Course Content and Topics

- General hardware and software architecture.
- Models of computation.
- The hardware architecture.
- Data representation — data types, ASCII and UNICODE.
- Binary arithmetic, ones and twos complement, floating point, hexadecimal.
- Machine arithmetic.
- Intel assembler programming.
- Boolean logic, first order logic, truth tables.
- Data transmission — encoding and framing.