



Computer Science (COMP) 218

Introduction to Computer Programming with Python (Revision 1)

Status:

Replaced with new revision, see the [course listing](#) for the current revision

Delivery mode:

Individualized study online

Credits:

3

Area of study:

Science

Prerequisite:

None

Precluded:

None

Challenge:

COMP 218 has a challenge for credit option.

Faculty:

[Faculty of Science and Technology](#)

Notes:

Students are expected to have basic computer literacy and competence working with computers to enrol in this course. Please contact the **course coordinator** before registering if this is a concern.

Overview

COMP 218 will introduce you not only to the Python programming language, but also to how to use computer programming to solve problems. Your journey will begin with a brief overview of computers and computer languages, from which you will learn the essential principles and mechanisms of modern computers and computing. This will be followed by an introduction to Python and problem solving with Python, with a focus on how to describe the steps or algorithms that computers use to solve a problem or complete a task.

Outline

This course consists of 10 units:

- Unit 1: Introduction
- Unit 2: Essential Building Blocks of Computer Programs
- Unit 3: Conditional and Selective Statements
- Unit 4: Iterative Statements
- Unit 5: Handle Errors and Exceptions in Programs
- Unit 6: Use Sequences, Sets, Dictionaries, and Text Files
- Unit 7: Define and Use Functions
- Unit 8: Object-Oriented Programming with Python
- Unit 9: Modules and Packages
- Unit 10: Develop GUI-Based Applications

Learning outcomes

Upon successful completion of this course, you should be able to

- discuss computers and programming languages.
- analyze problems and design algorithms to solve the problems.

- program in Python to solve problems using various data types, files and program constructs.
- handle errors and exceptions properly and effectively in programs.
- design and use functions, including recursive functions.
- design and use classes in problem solving and system development with Python.
- design and use modules to solve more complex problems.
- describe which Python modules are available for specific applications.
- design and implement GUI-based applications with Python.

Evaluation

To **receive credit** [↗](#) for COMP 218, you must achieve a course composite grade of at least **D (50%)** [📄](#) and a grade of at least 50% on the final examination. The weighting of the composite grade is given below:

Activity	Weight
Assignment 1	20%
Assignment 2	20%
Assignment 3	20%
Assignment 4	20%
Final Examination	20%
Total	100%


The **final examination** for this course must be requested in advance and written under the supervision of an AU-approved exam invigilator. Invigilators include either ProctorU or an approved in-person invigilation centre that can accommodate online exams. Students are responsible for payment of any invigilation fees. Information on exam request deadlines, invigilators, and

other exam-related questions, can be found at the [Exams and grades](#) section of the Calendar.

To learn more about assignments and examinations, please refer to Athabasca University's [online Calendar](#).

Materials

This course either does not have a course package or the textbooks are open-source material and available to students at no cost. This course has a [Course Administration and Technology Fee](#), but students are not charged the Course Materials Fee.

Wang, H. (2023, September). *Introduction to computer programming with Python*. Remix.  (PDF)

The textbook is available at AU Press as a free downloadable PDF or EPUB.

Challenge for credit

Overview

The challenge for credit process allows you to demonstrate that you have acquired a command of the general subject matter, knowledge, intellectual and/or other skills that would normally be found in a university-level course.

Full information about [challenge for credit](#) can be found in the Undergraduate Calendar.

Evaluation





To [receive credit](#) for the COMP 218 challenge registration, you must complete a project and an examination and achieve a grade of at least **D (50%)** on both the project and the exam. The weighting of these grades is given below:

Activity	Weight
Project	50%

Activity	Weight
Examination	50%
Total	100%

 [Challenge for credit course registration form](#)

Important links

- > [Academic advising](#) 
- > [Program planning](#) 
- > [Request assistance](#) 
- > [Support services](#) 

Athabasca University reserves the right to amend course outlines occasionally and without notice. Courses offered by other delivery methods may vary from their individualized study counterparts.

Opened in Revision 1, November 1, 2023

Updated July 29, 2024
