Computer Science (COMP) 206

Introduction to Computer Programming (C++) (Revision 2)

Delivery mode:	Individualized study online ⧉ with eText ⧉
Credits:	3
Area of study:	Science
Prerequisites:	COMP 200 or coordinator approval.
Precluded:	COMP 306, COMP 307 and COMP 389. (COMP 206 cannot be taken for credit if credit has already been obtained for COMP 306, COMP 307 or COMP 389).
Challenge:	COMP 206 is not available for challenge.
Faculty:	Faculty of Science and Technology ⧉
Status:	Replaced with new revision, see the course listing ⧉ for the current revision ⊗
Notes:	Students who are concerned about not meeting the prerequisites for this course are encouraged to contact the course coordinator before registering

Overview

COMP 206 is designed to introduce you to programming in the C++ computer programming language. The course progresses from first principles to advanced topics in object oriented programming using C++.

Outline

COMP 206 consists of the following units:

- Unit 0: Introduction to C++

- Unit 1: Introduction to Objects

- Unit 2: Making and Using Objects

- Unit 3: The C in C++

- Unit 4: Data Abstraction

- Unit 5: Hiding the Implementation

- Unit 6: Initialization and Cleanup

- Unit 7: Function Overloading and Default Arguments

- Unit 8: Constants

- Unit 9: Name Control

- Unit 10: References and the Copy-Constructor

- Unit 11: Operator Overloading

- Unit 12: Dynamic Object Creation

- Unit 13: Inheritance and Composition

All units are closely based on material from *Thinking in C++*, 2nd Edition by Bruce Eckel.

Learning outcomes

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

- articulate the principles of object-oriented problem solving and programming.

- outline the essential features and elements of the C++ programming language.

- explain programming fundamentals, including statement and control flow and recursion.

- apply the concepts of class, method, constructor, instance, data abstraction, function abstraction, inheritance, overriding, overloading and polymorphism.

- program with basic data structures using array, list, and linked structures.

- explain the object-oriented design process and the concept of software engineering.

- program using objects and data abstraction, class, and methods in function abstraction.

- analyze, write, debug, and test basic C++ codes using the approaches introduced in the course.

- analyze problems and implement simple C++ applications using an object-oriented software engineering approach.

Evaluation

To **receive credit** ☑ for COMP 206, you must achieve a course composite grade of at least **D (50 percent)** ⎙ , including a grade of 50 percent on each assignment, and at least 50 percent on the final examination. The weighting of the composite grade is as follows:

Activity	Weight
Assignment 1	15%
Assignment 2	20%
Assignment 3	25%
Final Exam	40%
Total	**100%**

The **final examination** for this course must be taken online with an AU-approved exam invigilator at an approved invigilation centre. It is your responsibility to ensure your chosen invigilation centre can accommodate online exams. For a list of invigilators who can accommodate online exams, visit the **Exam Invigilation Network** ☑ .

To learn more about assignments and examinations, please refer to Athabasca University's **online Calendar** ☑ .

Materials

Eckel, B. (2000) *Thinking in C++*, 2nd ed. Prentice Hall, Upper Saddle River, NJ. 📖 (eText)

eText

Registration in this course includes an electronic textbook. For more information on **electronic textbooks** ☑ , please refer to our **eText Initiative site** ☑ .

Other Resources

All other learning resources will be available online.

Available from the Course Website

- *Computer Science 206 Study Guide*

- Assignments and instructions

- A course evaluation form

- Links to other web-based course resources

Available from Other websites:

- C++ Compiler and development environment tools.

- Online version of *Thinking in C++*

- Program examples from *Thinking in C++*

Additional supporting materials of interest to students may occasionally be made available electronically.

Special Course Features

COMP 206 is offered through Moodle, a learning management system that is accessed through the **myAU** ⬀ portal. COMP 206 can be completed at the student's workplace or home. COMP 206 is an elective in all undergraduate programs offered by the **School of Computing and Information Systems** ⬀ .

Important links

> **Academic advising** ⬀

> **Program planning** ⬀

> **Request assistance** ⬀

> **Support services** ⬀

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Updated October 6, 2022, by Student & Academic Services

View **previous revision** ⬀