Course Code   Course Title
COMP 2011   **Programming with C++**

Course Description

This course covers programming and data structures using C++. In addition to basic
programming concepts such as variables and control statements, students will learn about
arrays, pointers, dynamic data allocation, linked lists, stacks, queues, binary trees,
recursion, and the basics of object oriented programming. Prerequisite(s): COMP 1021 OR
COMP 1022P OR COMP 1022Q (prior to 2020-21) OR ISOM 3230. Exclusion(s): COMP
2012H.

List of Topics

1. Introduction to computer programming
2. C++ basics: basic syntax, data types, operators
3. Control flow
4. Functions
5. Array and structure
6. Recursion
7. Scope
8. Struct
9. Pointers
10. Dynamic Data
11. Class
12. Stack and Queue
13. File input / output

Textbooks

Big C++: Late Objects, 3rd Edition
Cay S. Horstmann eBook ISBN:
9781119402978

Reference books
N/A

Grading Scheme

Lab exercises	12%
Programming assignments	24% (8%, 8% , 8%)
Midterm	24%
Final exam	40%
Total	100%

Course Intended Learning Outcomes

1. Use common software tools to develop and debug a program written in an OOP language.
2. Write a short program to solve a simple problem in an OOP language.
3. Demonstrate that recursive and non-recursive functions are abstractions of subproblems in a task.
4. Describe the concept and the use of pointers in indirect addressing and dynamic memory allocation.
5. Demonstrate the use of several data structures.
6. Implement an abstract data type by defining a class in an OOP language.

Assessment Rubrics
N/A