Course CodeCourse TitleCOMP 2011Programming 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

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Grading Scheme

Lab exercises	10%
Programming assignments	24% (8%, 8%, 8%)
Quiz on C++ Basics	5%
Midterm	25%

Final exam	36%
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