

Common Course Outline

CSIT 214

C++ Programming

4 Credits

The Community College of Baltimore County

Description

CSIT 214 – C++ Programming applies object-oriented techniques and includes coverage of data types and program structures, basic input/output functions, and arithmetic operators; emphasizes applications using arrays, vectors, pointers, functions, structures, and files.

4 Credits

Pre-requisites: CSIT 210 or consent of Program Director

Overall Course Objectives

Upon completion of this course student will be able to:

1. identify the steps in the software design process;
2. design algorithms and translate them into working solutions;
3. implement modular structures using user-defined functions;
4. identify the data types and variable naming conventions;
5. demonstrate how to perform calculations for scientific and business applications;
6. demonstrate inputting and outputting of data;
7. identify techniques for formatting data;
8. construct programs using the 3 control structures: sequence, selection, and repetition;
9. write programs using arrays, vectors, and pointers;
10. write programs using strings;
11. write programs using object-oriented techniques including classes, overloading, inheritance, and polymorphism;
12. identify, explain, and discuss data organization; and
13. examine the impact of testing and validating the solutions when developing an application.

Major Topics

- I. Use of Integrated Development Environment (IDE)
- II. Program development cycle
- III. Identifiers
 - A. Variables
 - B. Constants
- IV. Input and output
 - A. Accepting data from the keyboard
 - B. Formatting output

- V. Calculations
- VI. Selection
- VII. Repetition
- VIII. Functions
 - A. User-defined
 - B. Local/global variables
- IX. Arrays
 - A. One and two dimensional arrays
 - B. Passing to functions
- X. Pointers
- XI. Strings
- XII. Vectors
- XIII. Data/text files
- XIV. Structures
- XV. Object-oriented concepts
 - A. Classes
 - B. Overloading
 - C. Constructors
 - D. Inheritance
 - E. Polymorphism

Course Requirements

Grading procedures will be determined by the individual faculty member but will include the following:

Grading/exams

- Minimum of 5 programming projects*
- Minimum of 2 tests including coding problems
- Comprehensive final exam or programming project

*These projects will include collaborative work, written portions and oral presentations as assigned by the faculty member.

Written Assignments: Students are required to use appropriate academic resources.

Other Course Information

This course is required for the Information Technology Programming option and for the Computer Science degree.