

# Common Course Outline

CINS 228

Advanced Programming with Visual C++

4 Semester Hours

## The Community College of Baltimore County

### Description

#### **Advanced Object Oriented Programming C++**

Explores advanced concepts of object oriented programming using the C++ programming language; discusses use of object oriented programming paradigm to write programs with Graphical User Interfaces (GUI) using the Win32 API and objects from libraries such as Microsoft Foundation Classes; Programming projects will be created using Microsoft Visual C++.

3 credits: 2 lecture hours, 2 laboratory hours.

Prerequisite: CINS 227 or consent of the Program Director or Academic Dean.

### Overall Course Objectives

Upon completion of this course the student will be able to:

- A. Describe advanced concepts of object oriented programming
- B. Compile and link programs using Visual Studio
- C. Implement programs utilizing Microsoft Foundation Classes
- D. Utilize the tools and utilities provided by modern integrated programming environments
- E. Develop an advanced working knowledge of the Windows programming environment
- F. Design, code, and maintain moderately complex C++ programs

### Major Topics

- A. Review of basic concepts of C++
- B. Concepts of Windows Programming
- C. The Win32 API
- D. Introduction to the Microsoft Foundation Classes
- E. Root Class: Cobject
- F. MFC Application Architecture Classes
- G. Window, Dialog, and Control Classes
- H. Drawing and Printing Classes

- I. Simple Data Type Classes
- J. Array, List, and Map Classes
- K. File and Database Classes
- L. Internet and Networking Classes
- M. OLE Classes
- N. Debugging Support Classes

### **Course Requirements**

Grading: Grading procedures will be determined by the faculty member, will be provided the first week of class, and will include:

1. Minimum of 6 programming projects
2. Minimum of 6 tests or quizzes.
3. Comprehensive final exam.

### **Other Course Information**

This course meets the programming language requirement in CIS: Programming and is a CIS elective.

This course is taught in a computerized environment.

This course is the second course in a two-course sequence.

Date Revised: 6/1/00