Common Course Outline

CMSC 107

Basic Programming I

3 Semester Hours

The Community College of Baltimore County

Description

Basic Programming I

Introduces programming using structured Visual BASIC with an emphasis on mathematical and scientific applications; includes use of computers for problem-solving and structured programming concepts, basic characteristics and features of computers, hardware, software, graphical user interfaces (GUI) and problem-solving using algorithms and block diagrams, decision making and repetitive processing. NOTE: Additional lab time outside of class is required for programming assignments.
Prerequisites: Reading Skill 1; English Skill 2; Algebra I and Math Skill 2, or MATH 101.

Overall Course Objectives

Upon successfully completing the course, students will be able to:

1. analyze problems to determine appropriate programming solutions.
2. debug logic-based programming errors.
3. develop graphical user interface components.
4. create user-friendly objects and events.
5. convert input from the user or files.
6. create arrays and loops to handle large files of input and output.
7. organize code into sub procedures.
8. write well-written programs in a structured programming style.
9. work in teams to develop a large program.
10. continue the study of computer science in Visual Basic, C/C++, or similar languages.

Major Topics

I. Introduction to Visual Basic
   A. Makeup of a VB program (project)
   B. Use of Integrated Development Environment
   C. Computer components
   D. Familiarity with Windows, disks, folders
   E. Use of program development cycle
   F. Working with programming tools

II. Adapting Programming Fundamentals to Visual Basic
   A. Working with VB objects
   B. Causing VB events
   C. Processing numeric and string constants
   D. Using input and output statements
   E. Using built-in numeric functions
   F. Manipulating characters with string functions

III. Structuring Procedures
   A. Use of variables and expressions in subprograms
   B. Passing values among subprograms
   C. Creating user defined functions
   D. Using modular design to refine programs

IV. Computer Decision Making
   A. Relational and logical operators
   B. Use of If-Blocks for specific courses of action
   C. Use of Case Blocks for choice of actions

V. Repetitive Processing
   A. Use of Do Loops
   B. Processing data lists with Do Loops and nested loops
   C. Using For..Next loops
   D. Analysis of a loan application

VI. Working with Arrays
   A. Creation and Access of Arrays
   B. Passing arrays to procedures
   C. Control arrays of visual objects
   D. Using two-dimensional arrays

Course Requirements

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

1. Computer Projects: Students will develop at least five computer programming projects, ranging from introductory labs to mathematical projects. Programming time outside of class is required to complete projects.
2. At least two tests, exams, and/or quizzes: Individual faculty will notify students of the testing procedures to be used.
3. Comprehensive Final Exam: The course will include a comprehensive final exam, which may include a final project.
4. Final Grades: Grades will be determined by individual faculty members.

Individual faculty members may include additional course objectives, major topics, and other course requirements to the minimum expectations stated in the Common Course Outline.

The Community College of Baltimore County is committed to providing a high-quality learning experience that results in growth in knowledge, attitudes, and skills necessary to function successfully as a transfer student, in a career and as a citizen. To accomplish this goal, we maintain high academic standards and expect students to accept responsibility for their individual growth by attending classes, completing all homework and other assignments, participating in class activities and preparing for tests.

We take seriously our responsibility to maintain high-quality programs and will periodically ask you to participate in assessment activities to determine whether our students are attaining the knowledge, attitudes and skills appropriate to various courses and programs. The assessment activities may take many different forms such as surveys, standardized or faculty-developed tests, discussion groups or portfolio evaluations. We ask that you take these activities seriously so that we can obtain valid data to use for the continuous improvements of CCBC's course and programs.