

Common Course Outline

CMSC 235

Java Programming

3 Semester Hours

The Community College of Baltimore County

Description

Java Programming

Discusses portable object-oriented language for applets and applications; covers classes, inheritance, exception handling, graphics, graphical user interfaces, and threads. Note: Intended for students familiar with C/C++.

Prerequisite: CMSC 201 or CINS 225 or CMSC 225 or consent of instructor.

Overall Course Objectives

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

1. make appropriate use of the sequence, selection and repetition control structures within Java programs for problem-solving.
2. use object-oriented programming in Java for problem-solving.
3. create Java applets and Java applications to specifications.
4. create graphical user interfaces with Java's awt (Abstract Windowing Toolkit), including components such as labels, buttons, and textfields.
5. understand basic concepts of Java's dynamic event handling and use event listeners and event handlers to process events.
6. use sound and images in Java applets (programs that operate within a browser and appear in a web page).
7. use the URL class in a Java program.
8. use the StringBuffer and StringTokenizer classes for string processing including comparisons, substrings, and concatenation.
9. understand basic ethical and security issues related to use of Java in webpages.
10. understand and practice team concepts to utilize diverse skills of team members.
11. understand basic concepts of inheritance, polymorphism, and dynamic method binding.
12. use threads (separately runnable tasks).
13. make appropriate use of exception handling.

Major Topics

- I. Java Control Statements
 - A. Sequence
 - B. Selection
 - C. Repetition
- II. Classes and Methods
 - A. Constructors
 - B. Overloaded Methods
 - C. Set and Get Methods
- III. Object-Oriented Programming Concepts
 - A. Java Primitive Data Types and their Wrapper Classes
 - B. Superclasses and Subclasses

- C. Inheritance Hierarchies
- D. Polymorphism and Dynamic Binding
- IV. String Processing
 - A. String Class
 - B. StringBuffer Class
 - C. StringTokenizer Class
- V. Graphics Objects
 - A. Font and Color
 - B. Drawing Strings
 - C. Drawing 2-D Figures (Lines, Arcs, Rectangles, Polygons)
- VI. Graphical User Interfaces
 - A. Components (Labels, Buttons, TextFields, Choice, Checkbox)
 - B. Handling Events
 - C. Layout Managers
- VII. Exception Handling
 - A. Exception Classes
 - B. Throwing an Exception
 - C. Catching an Exception
- IX. Advanced Concepts
 1. Use of Sound and Images
 2. Threads and Multithreading
 3. Use of Animation

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. Oral Report: The student will give a brief (five minute) report on a current event or topic involving Java.
2. Written Paper: The student will use the Internet and other sources of information to write a paper on a topic of his/her interest, as approved by the instructor. References will be cited according to guidelines.
3. Team Project: At least one project. Students will work in teams to produce Java programs (applications or applets), as approved by the instructor.
4. Test: At least one test will be given. Individual faculty will notify students of the testing procedures to be used.
5. Comprehensive Final Exam: The course will include a comprehensive final exam.
6. 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.